



# INVESTIGATIONS BY SAMSUNG SHOW IRRESPONSIBLE CHEMICALS MANAGEMENT AND POLLUTION OF VIETNAM'S ENVIRONMENT

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**SHARPS:** Supporters for the Health and Rights of People in the Semiconductor Industry (SHARPS) advocates for health, worker safety and workers' rights in the electronics industry.

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for a toxics-free future

**IPEN:** The International Pollutants Elimination Network (IPEN) is a global network of public interest non-governmental organizations working in more than 100 countries to reduce and eliminate the harm to human health and the environment from toxic chemicals.

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Thanks to Newstapa for their series of incisive investigative reports on this issue, including interviews with the whistleblower.

A very special thanks to Mr. Kang, the Samsung Electronics whistleblower. The authors deeply appreciate his expertise in environmental health and safety and his bravery in stepping forward to reveal the reality of how Samsung has operated in Vietnam.

**On the cover:** (top) Samsung Electronics mobile phone factory in Bac Ninh, Vietnam,

photo credit: [www.ohmynews.com/NWS\\_Web/View/img\\_pg.aspx?CNTN\\_CD=IE002333477](http://www.ohmynews.com/NWS_Web/View/img_pg.aspx?CNTN_CD=IE002333477);

(bottom left) Newstapa reporter measurement of fine dust levels outside of Samsung Electronics suppliers in Vietnam shows unhealthy levels of PM2.5 and PM10.

The Korean phrase says, "Fine dust, very harmful.", photo credit: <https://newstapa.org/article/z5s-l>;

(bottom right) Workers at Samsung Vietnam's mobile phone factory,

photo credit: <https://phamhongphuoc.net/2013/07/10/nhung-co-gai-xuan-thi-samsung-bac-ninh/>

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# FORWARD

By Mr. Kang, Samsung whistleblower

I worked at Samsung for 41 years as an environmental health and safety manager. For more than six years, I worked in the department in charge of environmental health and safety at Samsung Electronics headquarters and participated in the publication of the sustainability reports. I took great pride in Samsung, striving for sustainable development and environmental health and safety.

On a business trip to Vietnam in December 2012, I realized the serious environmental problems at the Bac Ninh factory. I reported to the head of the Vietnam plant and the management at company headquarters. Some of the problems were improved, but the core problem of bad odors was not solved. In January 2016, when I started working in environmental health safety at Samsung's Vietnam plant, the odors had not changed, and it was affecting the residents around the plant. I saw Samsung's unsustainable attitude toward environmental issues and I lost my pride in the company.

For more than 6 years during my time as an environmental health and safety officer in Vietnam, I made a lot of efforts to find and improve the problems of Samsung and its suppliers. But Samsung's overseas factories are still poorly managed and too dangerous. I am now retired, but I still want people to work in a safe and comfortable working environment at Samsung and its suppliers and not be exposed to harmful and dangerous working conditions. That is why I came forward as a whistleblower. I hope this report will be the start of that change.

## ABBREVIATIONS

AFTA	ASEAN Free Trade Area
APHA	American Public Health Association
ASEAN	Association of Southeast Asian Nations
BHRRC	Business and Human Rights Resource Centre
BOD	Biological oxygen demand
CDI	Centre for Development and Integration
CGFED	Research Centre for Gender, Family and Environment in Development
CNC	Computer numerical control
CO	Carbon monoxide
COD	Chemical oxygen demand
CRT	Cathode ray tube
EGEs	Ethylene glycol ethers
EHS	Environmental Health and Safety
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEF	Global Environment Facility
GSO	Vietnam General Statistics Office
HANEL	Hanoi Electronics Company
ICCM	International Conference on Chemicals Management
ILO	International Labour Organization
IPA	Isopropyl alcohol
IPEN	International Pollutants Elimination Network
K-COMWEL	Korea Worker's Compensation and Welfare Service (South Korea)
KOSHA	Korean Occupational Safety and Health Administration (South Korea)
KPI	Key performance indicator

LCD	Liquid crystal display
MNE	Multi-national enterprise
MOEL	Ministry of Employment and Labor (South Korea)
MOLISA	Ministry of Labour, Invalids and Social Affairs (Vietnam)
MoNRE	Ministry of Resources and Environment (Vietnam)
MPI	Ministry of Planning and Investment (Vietnam)
NCI	National chemical inventory (Vietnam)
NHL	Non-Hodgkin lymphoma
NO <sub>x</sub>	Nitrogen oxides
O <sub>2</sub>	Oxygen
OECD	Organization for Economic Cooperation and Development
OEM	Original equipment manufacturer
POPs	Persistent Organic Pollutants
PRTR	Pollutant Release and Transfer Registry
RBA	Responsible Business Alliance
SAICM	Strategic Approach to International Chemicals Management
SAS	Samsung Austin Semiconductor
SAVINA	Samsung Vina Electronics
SDGs	Sustainable Development Goals
SDV	Samsung Display Vietnam
SEHC	Samsung Electronics Ho Chi Minh City CE Complex
SEM	Samsung Electro-Mechanics
SEV	Samsung Electronics Vietnam
SEVT	Samsung Electronics Vietnam Thai Nguyen
SHARPS	Supporters for the Health and Rights of People in the Semiconductor Industry
SMD	Surface-mounted devices
SO <sub>2</sub>	Sulfur dioxide
TAVOI	Taiwan Association for Victims of Occupational Injuries
TCEQ	Texas Commission on Environmental Quality
TDS	Total dissolved solids
UN	United Nations
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Program
USD	United States of America dollar
VEI	Vietnamese electronics industry
VCCI	Vietnam Chamber of Commerce and Industry
VGCL	Vietnam General Confederation of Labor
WEM	Workplace environmental monitoring report
WRO	Workers representative organization
VOC	Volatile organic compound
WHO	World Health Organization
WTO	World Trade Organization

## ABOUT THIS REPORT

This report features the revelations of an electronics industry insider. Mr. Kang, whose full name is withheld to protect his identity, is a 40-year veteran of Samsung Electronics and an expert in the field of environmental health and safety. He worked for Samsung for many years in South Korea and later served as Manager of Environmental Health and Safety at Samsung Vietnam. In 2023, Mr. Kang stepped forward as a whistleblower and revealed the true nature of Samsung's factory operations in a series of ground-breaking news reports by investigative journalists at Newstapa. The Seoul-based independent news collective's reports on Mr. Kang's revelations can be accessed via the following links or QR codes. These video reports are in Korean with subtitles available in Chinese, English and Vietnamese.

The Newstapa investigative reports are:

1: Global Samsung's Dangerous Factory #1: A Safety Manager's Confession<sup>1</sup>



2: Global Samsung's Dangerous Factory #2: The Secret of 7 Years of Stench<sup>2</sup>



3: Global Samsung's Dangerous Factory #3: Evolving Risk<sup>3</sup>



4: Global Samsung's Dangerous Factory #4: Risk Transferred<sup>4</sup>



5: Global Samsung's Dangerous Factory #5: A Hole in 'Samsung Management'<sup>5</sup>



This report examines the information revealed by Mr. Kang in the Newstapa reporting and further deepens it with Samsung internal documents provided by the whistleblower. Previously, a 2017 report shed light on the working conditions and experiences of woman workers in Samsung's mobile phone factories in Vietnam.<sup>6</sup> This report builds on that investigation and offers a unique contribution to the existing information on working conditions and factory operations in the electronics industry, particularly in Vietnam as a case study for multinational corporate operations in developing countries.<sup>7 8 9 10</sup>

Note that there are various groups focused on environmental health and safety (EHS) that are mentioned in this report. The Global EHS Center oversees the EHS work of the entire company and is located at Samsung Electronics headquarters. The Gumi Plant EHS Group is located at the company's mobile phone factory in Gumi, South Korea, but also played a role in EHS work at the Bac Ninh Plant in Vietnam, which manufactures mobile phones. Samsung's factories in Vietnam include EHS work by the Bac Ninh Plant EHS team and the Ho Chi Minh Plant EHS Group, among others.

Because Samsung is notoriously secretive, the report offers a rare insight into factory operations at Samsung Electronics and its suppliers from the company's own internal point of view. The true nature of the Samsung's lax approach to management of occupational and environmental health and safety is revealed by internal information from one of their own managers. The report also highlights the extent to which Samsung's public disclosure about environmental health and safety management is disconnected from reality.

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## EXECUTIVE SUMMARY

This report provides key insights into Vietnam's electronics industry by examining South Korea-based Samsung Electronics, the country's dominant foreign investor. To understand how the company has conducted manufacturing in Vietnam, the authors used internal documents and photos to reveal how the company evaluates its own operations. These revelations along with South Korea's grim experience with the electronics industry should play an important role in developing and implementing policy measures to protect human health and the environment and ensure the full realization of human rights.

### VIETNAM'S AMBITIOUS PLANS FOR THE ELECTRONICS INDUSTRY

Samsung Electronics dominates the electronics industry in Vietnam where it manufactures appliances and approximately half of its mobile phones globally.<sup>1</sup> Samsung started its operations in Vietnam in 1996 and quickly grew to become the country's largest foreign investor.<sup>2 3 4</sup> The Government of Vietnam has welcomed Samsung's investment because the electronics industry has been promoted as an integral part of a major development strategy at the country's highest political level.<sup>5</sup> To further expand the electronics industry, Vietnam is pushing for the country to become a semiconductor manufacturing hub.<sup>6</sup>

### VIETNAM IS VULNERABLE TO POLLUTION FROM THE ELECTRONICS INDUSTRY

Information about environmental impacts and occupational health in the Vietnamese electronics industry is lacking but very important due to the industry's rapid growth, large factory operations, and status as one of the country's largest employers.<sup>7 8 9</sup> However, the primary legal document shaping the government's policy approach to the sector fails to mention environmental protection, working conditions, or measures to protect communities and worker health and safety.<sup>10</sup> The public does not have information about chemical releases from factories or the results of regulatory agency investigations. Some efforts have been made to establish a pollutant release and transfer registry system, but it covers only a small number of chemicals and the data is not publicly accessible.<sup>11</sup>

### WOMEN PLAY A MAJOR ROLE IN THE ELECTRONICS INDUSTRY WORKFORCE

The majority of the electronics industry workforce in Vietnam is made up of women working in assembly lines.<sup>12 13</sup> A survey of women workers at Samsung mobile phone factories in 2017 reported fainting, feeling dizzy, miscarriage, high noise levels, and poor knowledge of chemical safety.<sup>14</sup> Samsung categorically dismissed the information in the report provided by its female workers and threatened legal action against the public interest group authors.<sup>15</sup> The company then initiated and escalated a smear campaign against the report and its authors to the point of necessitating a response from UN human rights officials who wrote a public letter to Samsung and the Vietnamese government expressing concerns over intimidation.<sup>16</sup>

### A SAMSUNG WHISTLEBLOWER STEPS FORWARD

In 2023, a 40-year veteran of Samsung Electronics and former Manager of Environmental Health and Safety (EHS) stepped forward as a whistleblower in a series of interviews by South Korean investigative journalists at Newstapa.<sup>17 18 19 20 21</sup> The whistleblower also provided internal company reports and photos of Samsung's factories in Vietnam to the authors of this report. These internal documents show how Samsung's factory operations have polluted the air, land, and water in Vietnam while top management remained indifferent to the situation.<sup>22</sup> Samsung investigations also documented violations at Samsung suppliers.<sup>23</sup> Taken together, the company's investigations reveal a consistent pattern of Samsung externalizing the costs of pollution from production of mobile phones and appliances onto Vietnam's communities, workers, and environment.

### SAMSUNG'S INSPECTIONS REVEAL IRRESPONSIBLE CHEMICALS MANAGEMENT

Poor management runs like a thread through Samsung's operations in Vietnam in ways that would not be permitted in South Korea where it is headquartered.<sup>24</sup> Samsung started factory operations in Vietnam even though there was no wastewater handling system for toxic production wastes.<sup>25</sup> Quietly, the company illegally dumped production wastewater containing toxic chemicals into the environment for years.<sup>26 27 28</sup> Improper

design and operation of air pollution control systems resulted in severe air pollution.<sup>29 30 31</sup> After years of polluting the surrounding community, Samsung outsourced the most toxic manufacturing processes to its suppliers — companies that generally have even less capacity and awareness of environmental health and safety than Samsung.<sup>32 33</sup> This company decision has continued air pollution and health impacts in other communities to the present day.<sup>34 35</sup> The company's careless approach to waste management raises concerns, considering that in at least one province it is a major generator of hazardous wastes.<sup>36</sup> Emissions from Samsung factories and their suppliers in Vietnam are not publicly reported. In contrast, at home, Samsung Electronics' emissions are publicly available because the company must report releases and transfers of more than 400 substances to air, land, water, and wastes through South Korea's pollutant release and transfer registry (PRTR) system.<sup>37</sup> Samsung took advantage of the fact that Vietnam did not have a PRTR system and hid its air pollution and toxic wastewater dumping from regulators and the public.

## POOR SUPPLY CHAIN MANAGEMENT

Samsung claims responsible management of its suppliers but the company's investigations show numerous compliance violations in suppliers including poor management of air pollution control facilities; discharge of raw sewage and toxic wastewater directly into the environment; oil and chemical leaks; and improper waste management.<sup>38 39</sup> Samsung suppliers are evaluated against a code of conduct that the company based on criteria developed by the Responsible Business Alliance (RBA).<sup>40</sup> However, Samsung has significantly weakened the RBA code by deleting or editing its requirements to reduce workers' rights and safety and grant the company more authority.<sup>41</sup> Samsung's supplier management system also opens the door to cheating by depending on suppliers to self-report their use and management of toxic chemicals and rewards them with more contracts if they self-report a good score.<sup>42</sup> If suppliers violate company environmental health and safety policies or government regulations, it does not affect their business contracts with Samsung which continue as usual.<sup>43</sup>

## COVERING UP EHS PROBLEMS INTERNALLY

The roles of Samsung's individual factory EHS teams and the Global EHS Center appear to be quite different. The understaffed EHS teams at factories in Vietnam try to ensure compliance with company and regulatory standards, but they do not have the capacity to inspect Samsung factory operations plus all supplier factories each year. In contrast, the Global EHS Center at Samsung's headquarters oversees EHS issues across Samsung Electronics and generates data for the company's sustainability reports, which publicly provide information on Samsung's EHS management practices. Surprisingly, the Global EHS Center gave the company's Bac Ninh factory a top score for compliance during a routine comprehensive EHS inspection, while knowing about its severe pollution problems. This indicates that the aim of Samsung's Global EHS Center's routine inspections is not to find problems but to report perfect compliance results for public consumption, even if it means covering up problems.<sup>44</sup>

## USING SUSTAINABILITY REPORTS TO HIDE EHS PROBLEMS EXTERNALLY

To preserve and enhance its image externally, Samsung Electronics' sustainability reports provide the public, investors, journalists, and others an alternative to the reality of the company's operations as revealed by their own investigations. One sustainability report describes company commitment to eco-driven business and management while its internal investigations show extensive air and water pollution in Vietnam.<sup>45 46 47</sup> A section of a sustainability report on air pollutant management states that the company installs optimal prevention facilities, while its own inspections in Vietnam showed rampant air pollution due to poor design and operation.<sup>48 49</sup> A sustainability report section on wastewater management claims the company only discharges wastewater after processing to remove pollutants.<sup>50</sup> However, the company factory in Bac Ninh did not even have a wastewater treatment facility and for three years just dumped toxic wastewater directly into the environment.<sup>51 52 53</sup> Samsung's sustainability reports have mentioned positive findings of third-party audits of their suppliers in Vietnam but have hidden nearly 13,000 compliance violations at its suppliers as identified by the company's own internal investigations over a four-year period.<sup>54 55 56</sup> The 2023 Sustainability Report mentions a notice of a corrective action by regulators in response to a wastewater spill at the company's

semiconductor plant in Texas, but hides the fact that the company released nearly 3 million liters of toxic wastewater into a river tributary over a period of more than three months, killing all aquatic life.<sup>57 58 59</sup> Samsung's culture of secrecy conceals company problems both externally and internally and paves the way for denial when problems appear. This deeply ingrained management approach makes resolving environmental health and safety problems extremely difficult.

## IRRESPONSIBLE CHEMICALS MANAGEMENT IS A CURRENT, ONGOING ISSUE

Samsung managed its severe air pollution problems at the Bac Ninh plant by outsourcing harmful, toxic processes to its suppliers. This moved serious air pollution problems to other communities where they still continue.<sup>60 61 62</sup> In 2023, Newstapa journalists measured high PM2.5 levels outside Samsung supplier factories.<sup>63</sup> Vietnamese media has described how a Samsung supplier has been discharging severe air pollution and dust all day and night. The surrounding community suffers from respiratory problems and a public health official noted increasing numbers of patients with throat and respiratory tract cancers.<sup>64</sup> Samsung claims to responsibly manage toxic chemical use at its factories and suppliers including restricting the use of methanol and other substances.<sup>65 66</sup> However, methanol is one of only 25 substances that Samsung Electronics partially regulates.<sup>67</sup> The company only completely prohibits two substances (benzene and n-hexane) and only certain uses of the other 23 chemicals are restricted. Even this weak regulatory scheme does not work properly. In 2023, 37 workers at a Samsung supplier were poisoned with methanol because of its use for prohibited purposes.<sup>68 69</sup> One worker died and at least three teenage workers lost their sight. Both Samsung and the supplier ignored poisoning symptoms in workers for weeks and it was actually the family of a worker who was hospitalized in a coma who discovered the cause of the poisoning.<sup>70</sup> Samsung refused to take any responsibility. The company's weak chemical policy is further undermined by Samsung's dependence on self-evaluation by suppliers which allows them to obtain a good score by concealing use of banned chemicals. The methanol poisoning tragedy and other information revealed by the company's internal investigations demonstrates that Samsung's lax approach to management of occupational and environmental health and safety at its factories and suppliers in Vietnam is a current issue.

## SOUTH KOREA'S EXPERIENCE IS HIGHLY RELEVANT TO VIETNAM

Scientific studies have documented a variety of occupational hazards in the “regular-tech” South Korean electronics industry (i.e. not the high-tech semiconductor industry).<sup>71 72 73</sup> These impacts are not legacy issues and continue to occur.<sup>74 75</sup> For example, in 2023, seven workers were poisoned by chloroform at an electronic component manufacturer in the city of Icheon, prompting the Ministry of Employment and Labor to conduct special inspections of workplaces handling cleaning agents nationwide.<sup>76</sup> Scientific research in South Korea has also highlighted the seriousness of occupational cancer and rare diseases among workers in the high-tech electronics industry, including Samsung.<sup>77 78 79 80 81 82 83 84 85</sup> South Korea's experience with environmental pollution from the electronics industry is also relevant to Vietnam. For example, the city of Gumi is a major “regular-tech” electronics manufacturing hub in South Korea with more than 1,700 companies including a Samsung mobile phone manufacturing plant. A 2015 study examining toxic volatile organic compounds (VOCs) in city air found toxic chemicals used in the electronics industry to be “ubiquitous.”<sup>86</sup> As the high-tech electronics industry expands in South Korea, its projected environmental impact also increases. In Pyeongtaek, approximately one million tons of wastewater from chip factories (including Samsung) will be released into public waterways by 2030.<sup>87</sup>

## HUMAN RIGHTS VIOLATIONS AND THE NEED FOR DUE DILIGENCE

Samsung Electronics' consistent pattern of externalizing the costs of pollution from mobile phone and appliance production onto Vietnam's environment, communities, and workers violates human rights.<sup>88</sup> This includes the human right to a clean, healthy, and sustainable environment;<sup>89 90 91</sup> children's right to live in a clean, healthy, and sustainable environment;<sup>92 93</sup> the right to a safe and healthy working environment;<sup>94 95</sup> and the UN Guiding Principles on Business and Human Rights.<sup>96 97 98 99 100</sup> In addition, Samsung's operations and government responses are not consistent with human rights principles outlined in UN Special Rapporteur reports. These principles include the right to information;<sup>101 102 103</sup> framework principles on human rights and

the environment,<sup>104 105 106</sup> and principles to respect and protect workers from toxic occupational exposures.<sup>107 108 109 110</sup> In South Korea, lawmakers proposed the Corporate Human Rights and Environmental Protection Act in 2023.<sup>111</sup> The law stipulates requirements for corporate human rights and environmental due diligence, including in global supply chains, but unfortunately, it has not yet been passed.<sup>112</sup>

## WHISTLEBLOWERS ARE IMPORTANT BUT EHS SYSTEMS SHOULD NOT DEPEND ON THEM

The detailed insights into the operations of Samsung Electronics in Vietnam described in this report only emerged due to a whistleblower with decades of company experience and deep knowledge of EHS issues. Whistleblowers play an extremely important role in reforming harmful or illegal company actions and they should be protected from threats or retaliation.<sup>113</sup> Ultimately, protection of human rights, human health, and the environment should not have to rely on the bravery of whistleblowers but instead result from government actions to formulate and implement rigorous regulations and a company management approach that fulfills human rights obligations and applies the most protective standards of worker and environmental protection worldwide in a company's factories and suppliers.

## MAIN FINDINGS

Key findings from this study include:

1. Samsung built the Bac Ninh mobile phone plant with an undersized air pollution control facility that could not handle the factory's production capacity. As a result, the factory released untreated chemical-containing air pollution for approximately seven years.
2. For three years of operation, Samsung's Bac Ninh plant did not have a wastewater treatment facility to treat toxic chemical-containing production wastes and they were quietly illegally dumped into the environment.
3. The Bac Ninh factory lacked local exhaust systems in areas where toxic chemicals were used, so workers were routinely exposed to toxic chemical fumes.
4. Samsung's top-level management at headquarters was informed about severe air and water pollution at the company's Bac Ninh plant in Vietnam but remained silent.
5. Government regulators in Vietnam granted approvals to Samsung's Bac Ninh factory despite the undersized capacity of the air pollution control facility and the complete absence of wastewater treatment facilities for toxic production wastes. Lack of laws requiring public reporting of emissions or payments for remediation allowed Samsung to hide its extensive pollution and avoid remediation costs.
6. Samsung's Global Environmental Health and Safety (EHS) Center at company headquarters conducted a special inspection of the Bac Ninh factory and found a wide range of violations of company policy, including air pollution, water pollution, and unsound waste management. However, in its routine reports, it gave top marks to the facility for air pollution control and wastewater treatment. This contradiction suggests that the role of the Global EHS Center is to give the appearance of good factory management while ignoring problems revealed by Samsung's own inspections.
7. Instead of upgrading its undersized air pollution control facility at the Bac Ninh plant, Samsung outsourced its most toxic operations to its suppliers in 2017. This transferred severe air pollution problems to other communities that are currently ongoing.
8. Externally, Samsung claims responsible management of its suppliers, but the company has failed to adequately manage EHS problems in its supply chain. Over a four-year period, Samsung's internal investigations found more than 13,000 compliance violations at its suppliers' factories with hundreds of compliance violations each quarter based on standards designed by the electronics industry. Non-compliance issues include air pollution, water pollution, and inadequate waste management. When presented with documentation of these issues, the company continued contracts with non-compliant suppliers. Samsung's supplier management system also opens the door to cheating by depending on suppliers to self-report their use and management of toxic chemicals and rewarding them with more contracts if they self-report a good score.

9. In 2018, Samsung's Thai Nguyen mobile phone factory generated 90% of all hazardous wastes in the province, despite the presence of many companies with polluting manufacturing processes such as cement, chemicals, electronics, plastics, and steel.
10. Many findings about the extensive pollution at Samsung's Bac Ninh plant emerged in 2012, but the company's 2013 Sustainability Report which reported on actions in 2012, ironically noted that the company has a *"commitment to sustainable development and social responsibility through eco-driven business and management activities."* In contrast to the results of its own investigations, the Sustainability Report claims that *"harmful effects are minimized and environmental incidents are prevented at the source."* Pollution problems continued to be identified after 2012, but Samsung's Sustainability Reports hid this fact.
11. The 2013 Sustainability Report section on air pollutant management, states that the company has been, *"installing optimal prevention facilities when increasing new production lines, and continuously performing efficiency enhancement activities at its prevention facilities."* However, the company built the Bac Ninh plant with inadequate, incorrectly sized air pollution control facilities and then failed to resolve that problem and instead operated it in violation of Samsung's own regulations by removing both filters and activated carbon, resulting in the discharge of polluted air. A Samsung EHS team documented this problem and informed top management at the company in 2012.
12. The 2013 Sustainability Report section on wastewater management states that, *"Samsung Electronics discharges all wastewater generated by its workplaces after processing it at internal processing facilities"* and that all discharge water is monitored. However, the company's investigation showed that the Bac Ninh factory did not even have a wastewater treatment facility for three years of operation and just dumped toxic wastewater directly into the environment. A Samsung EHS team documented this problem and informed top management at the company in 2012.
13. The 2022 Sustainability Report which reported on actions in 2021, claims that all chemicals *"are stringently controlled"* and that *"all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems."* However, in 2021, Samsung's Ho Chi Minh Plant EHS Group documented violations of company policies at its appliance factory in Ho Chi Minh City including discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment, and chemicals leaking inside the factory, posing a danger to workers.
14. Samsung has operated in Vietnam using double standards by ignoring measures they must routinely follow in South Korea. The lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that Samsung could keep extensive pollution hidden from regulators and the public. In contrast, emissions of more than 400 substances from Samsung Electronics' factories in South Korea are publicly reported through the country's PRTR system. The company refused to report emissions in Vietnam, while doing so in South Korea.
15. Samsung's human rights violations in Vietnam include the right to a clean, healthy, and sustainable environment; children's right to live in a clean, healthy, and sustainable environment; the right to a safe and healthy working environment; and the UN Guiding Principles on Business and Human Rights. Samsung's operations and government responses are not consistent with human rights principles outlined in UN Special Rapporteur reports including the right to information; framework principles on human rights and the environment; and principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights.
16. Samsung claims full compliance with Vietnamese laws but its internal investigations show violations of legal and company standards and human rights obligations. In South Korea, lawmakers proposed the Corporate Human Rights and Environmental Protection Act in 2023. The law stipulates requirements for corporate human rights and environmental due diligence, including in global supply chains, but unfortunately, it has not yet been passed.

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- As part of the hiring process, all workers must be provided with a written employment agreement in their native language that contains a description of terms and conditions of employment
  - All overtime must be voluntary.
  - ... ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace
  - Emergency drills must be executed at least annually or as required by local law, whichever is more stringent.
  - ... also recognize that ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace.
  - Participants shall identify the environmental impacts and minimize adverse effects on the community, environment, and natural resources within their manufacturing operations, while safeguarding the health and safety of the public.
  - Workers must be given a safe environment to provide grievance and feedback without fear of reprisal or retaliation.
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90. As noted in Chapter 2, Samsung's Bac Ninh plant released untreated chemical-containing air pollution for approximately seven years. When upper management at headquarters in Seoul became aware of the problems, they responded with silence. Residents living nearby noted that they “had been tortured by the bad smells from the factory” and that the pollution caused coughing and sickness.
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93. Toxic factory production wastes released to air, land, and water by Samsung factories and suppliers are highly relevant to this Convention and its recently updated legal guidance. In addition, workers at the company's factories or suppliers who are injured or sickened can impact children at home.
94. As noted in Chapter 2, Samsung's internal investigations in Vietnam revealed that its factory in Bac Ninh lacked local exhaust systems to send polluted air from production processes to air pollution control facilities. This violated company standards and exposed workers to toxic chemicals in numerous production processes.
95. A Samsung investigation at the company's Ho Chi Minh factory showed oil spills and chemical leaks contaminating the factory floor, posing a danger to workers. Please see Chapter 2.
96. As noted in Chapter 2, raw sewage from Samsung Electronics' Bac Ninh factory overflowed into the environment illegally for approximately four years without purification.
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103. As noted in Chapter 4, the Vietnamese public has learned about environmental violations of Samsung and its suppliers through news media reports when incidents occur. Information released by the media is limited to describing the basic outlines of the incident. The public does not have information about chemical releases, or the next steps such as the investigation agency's conclusions, penalty decisions, etc.
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105. As noted in Chapter 4, the lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that Samsung did not have to report chemical releases to the environment, keeping the extensive pollution hidden from the public and regulators. The company did (and does) have to report releases of more than 400 chemicals through South Korea's PRTR system, but chose not to do so in Vietnam. Despite efforts to create an initial PRTR system, there is no public reporting of chemicals released by Samsung in Vietnam.
106. As noted in Chapter 4, to this day, Vietnam still does not have specific legal regulations on the types of environmental information that must be widely disclosed according to authority and form of disclosure.
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# CHAPTER 1. SAMSUNG DOMINATES VIETNAM'S ELECTRONICS INDUSTRY

## KEY POINTS IN THIS CHAPTER

1. In 2022, the electronics industry accounted for the majority of the trade surplus in the entire Vietnamese industry.
2. Samsung dominates the electronics industry in Vietnam, manufacturing about half of its mobile phones in the country.
3. Samsung has approximately 100,000 employees in Vietnam and in 2022 exported USD\$65 billion in products, or 9% of Vietnam's total trade turnover.
4. The majority of the country's electronics workforce is made up of women.
5. In 2017, women workers blew the whistle on frequent fainting, dizziness, and miscarriages in Samsung Vietnam mobile phone factories and the challenges of working on their feet non-stop for a consecutive eight-to-twelve hours while alternating day and night shifts.
6. In 2018, Samsung's threats of legal action and categorical denial of the information provided by these workers prompted a letter of concern from three UN Special Rapporteurs.



The Samsung Electronics plant in Bac Ninh displays its massive export numbers on the outside of the building.

## THE ELECTRONICS INDUSTRY IS A KEY PART OF VIETNAM'S ECONOMY

Vietnam's electronics industry plays a crucial role in the country's fast-growing economy, contributing to a series of economic successes in its manufacturing industry. In 2022, despite a decline in global industrial production, the country's electronics industry recorded a total export turnover of USD\$108 billion with its own trade surplus of USD\$11.5 billion compared with the country's trade surplus in 2022 of USD\$12.4 billion.<sup>12</sup> This shows that the electronics industry earned the majority of the trade surplus in the entire Vietnamese industry.

Despite the sheer size and economic importance of the electronics industry, rigorous regulation and up-to-date information about the industry's potential impacts on human health and the environment is lacking. Vietnam has placed emphasis on developing standards to ensure the quality of electronics products.<sup>3</sup> However, there are no specific regulations on workplace safety in the electronics industry to safeguard the health of its workers.

The lack of data on health impacts and working conditions in the electronics industry underscores the need for increased publicly available knowledge of the sector and its impacts on the country. Independent research should be conducted and its findings should be used to formulate policies and actions that prevent harm to workers in the electronics industry and the surrounding environment. This is of particular importance to the health of women workers, who make up approximately 60% of the work force in the electronics industry, working in assembly lines.<sup>4</sup> The majority of these women are part of migrant labor from Vietnam's local provinces. Migration surveys show that the proportion of migrant women is increasing, creating a phenomenon known as "*womenization of migration.*"<sup>5 6</sup>



President and Head of Mobile Experience of Samsung Electronics, Roh Tae-moon (left), meets with Vietnamese Prime Minister Pham Minh Chinh (right) in Hanoi in August 2022.

## SAMSUNG LEADS THE ELECTRONICS INDUSTRY IN VIETNAM

Samsung started its first operation in Vietnam in 1996 and grew rapidly to play a key role in Vietnam's economy. In 2022, the company announced plans to increase its investment in Vietnam to USD\$20 billion, making the company the country's largest investor.<sup>7</sup> In 2022, the turnover of Samsung Vietnam's subsidiaries totaled USD\$71 billion — approximately a 12% increase from the previous year.<sup>8</sup> Samsung has approximately 100,000 employees in Vietnam and in 2022 exported USD\$65 billion worth of products, 9% of Vietnam's total trade turnover.<sup>9 10</sup> The company produces approximately half of its mobile phones globally in Vietnam.<sup>11</sup> In 2023, the company's Thai Nguyen plant came in second on the list of the 500 most profitable companies in Vietnam.<sup>12 13</sup>

After years of operation in Vietnam, Samsung has a total of eight subsidiaries operating in the country (see table below). In 2022, the company opened a USD\$220 million research and development center in Hanoi for research on smart devices, network technologies and software.<sup>14</sup> Also in 2022, after a meeting with Vietnam Prime Minister Pham Minh Chinh, the President and Head of the Mobile Experience Business of Samsung Electronics, Roh Tae-moon, announced the company's plans to invest USD\$850 million to begin the manufacture of ball grid array semiconductor components in Vietnam starting in 2023.<sup>15 16 17</sup>

## Samsung Operations in Vietnam

SAMSUNG SUBSIDIARY	PRODUCTS / ACTIVITIES	LOCATION
Samsung Display Vietnam	LCD panels and displays	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Electronics Ho Chi Minh City CE Complex (SEHC)	Home and office appliances including TVs, refrigerators, air conditioners, printers, washing machines, vacuum cleaners, and monitors	Ho Chi Min City High Technology Zone
Samsung Electronics Vietnam	Mobile phones and parts	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Electronics Vietnam Thai Nguyen	Mobile phones and parts	Yen Binh Industrial Zone, Thai Nguyen Province
Samsung Electro-Mechanics	Printed circuit boards, other electronic phone components, camera modules	Yen Binh Industrial Zone, Thai Nguyen Province
Samsung SDI	Mobile phone battery assembly	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Mobile Research and Development Center	Research center including smart devices, network technology, software	Hanoi
Samsung Vina Electronics (SAVINA)	Sales and marketing office	Ho Chi Min City

For more information about the electronics industry in Vietnam, please see Annex 1.



Workers at Samsung Vietnam's mobile phone factory.

## EXPERIENCES OF WOMEN WORKERS AT SAMSUNG'S MOBILE PHONE FACTORIES IN VIETNAM

In September 2016, Luu Thi Thanh Tam, a 22-year-old female worker at the Samsung Thai Nguyen mobile phone factory, suddenly died after collapsing in a cleanroom.<sup>18</sup> According to a Samsung health checkup four months earlier, her health was very good and she had no serious illness before working at Samsung. After Luu Thi Thanh

Tam's death, her brother was the first member of the family to arrive at the hospital. He stated that, "*Samsung and the police immediately started talking about an autopsy...*"<sup>19</sup> The brother refused to allow it based on family's wishes in line with the Vietnamese society view that autopsies desecrate a dead body.<sup>20</sup> However, the autopsy was performed despite the family's objections. The National Institute of Forensic Medicine concluded that no toxic substances were found in the samples of organs of Ms. Tam, though it is not clear what substances were measured. Hankyoreh reported that, "*Thirty minutes after the autopsy was completed, a Samsung employee arrived with a purchased coffin. The undertaker who sold the coffin was the reason her death became known to the rest of the world.*"<sup>21</sup> At the funeral, the police informed the family that Ms. Tam's death "*had nothing to do with the factory.*"<sup>22</sup>

In 2017, 45 women workers acted as whistleblowers by providing important information about working conditions in Samsung's Bac Ninh and Thai Nguyen mobile phone factories.<sup>23</sup> Findings included a variety of health and social impacts:

- All 45 women reported fainting or feeling dizzy on the job — though it was described as a "*normal*" consequence of shift work. Miscarriage was reported to be "*very normal if they are young.*" Other reported problems included eye / vision damage, nosebleeds, swelling or "*big legs,*" changes in beauty, and aches in the stomach, bones, and joints.
- Workers reported exhausting working conditions, including alternating day and night shifts for periods of 4 days; working on their feet for an entire 9 – 12-hour-long shift; and high noise levels regularly exceeding Vietnamese legal limits. Pregnant workers were standing for the entire shift but were permitted to take breaks.
- None of the women workers considered cleaning products as containing chemicals or thought about exposure from chemical use elsewhere in the factory. Jobs within mobile phone factories can involve the use of paints, inks, and cleaning products containing chemicals. Manufacturing process steps can include heating, gassing with metallic coatings, painting, laser carving, and cutting — all of which have the potential for chemical releases.
- More than half of the women workers were married and had children before their employment at the company. However, they could not live with their children in company dormitories due to the lack of childcare, medical care, and the constantly changing day and night shift schedule. As a result, their children often lived with their grandparents in another town or city.

A subsequent brief investigation of Samsung's mobile phone factories by the Ministry of Labour, Invalids, and Social Affairs (MOLISA) was not disclosed in its entirety, but a short web posting described some of its results.<sup>24</sup> The MOLISA study corroborated the 2017 study's findings of excessive working hours, labor contract violations, and lack of safety training. However, the investigation appeared to have omitted addressing excessive noise levels, insufficient break time, health effects, and chemical use and monitoring.

## SAMSUNG'S REACTION TO ITS FEMALE WHISTLEBLOWERS

Samsung categorically dismissed the information in the report provided by its female workers. Bang Hyun Woo, Vice General Director of Samsung Electronics Vietnam at the time, said that the report "*contains many groundless accusations*" and "*false and inaccurate information.*"<sup>25</sup> The company told Vietnamese press reporters that the report had, "*influenced and damaged the prestige of Samsung Vietnam.*"<sup>26</sup>

In November 2017, in a letter to CGFED, Samsung Vietnam threatened legal action against the organization, claiming that "*the content of the report with many inaccuracies as stated above will affect the prestige, reputation, the situation of production and business activities of SEV, SEVT in Vietnam in particular and Samsung Korea Electronics Corporation in general.*"<sup>27</sup>

In same month, CGFED replied to Samsung Vietnam, seeking clarification on which contents of their report were incorrect or inaccurate.<sup>28</sup> As of this date, the company has not responded.

Samsung escalated the smear campaign against the report to the point of necessitating a response from UN human rights officials who wrote a public letter of concern to Samsung and the Vietnamese government. The UN Special Rapporteurs' statement on Vietnam from Mr. Baskut Tuncak, Ms. Anita Ramasastry, and

Mr. David Kaye expressed concern about women workers in Vietnam. *“While an assessment of the findings of the report requires a response by the competent authorities, it is unacceptable that researchers or workers reporting on what they consider to be unhealthy and inadequate working conditions are intimidated by private or public officials.”*<sup>29</sup>

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# CHAPTER 2. HOW SAMSUNG FACTORIES HAVE POLLUTED VIETNAM'S ENVIRONMENT

## KEY POINTS IN THIS CHAPTER

1. Samsung built the Bac Ninh mobile phone plant with an undersized air pollution control facility that could not handle the factory's production capacity. As a result, the factory released untreated chemical-containing air pollution for approximately seven years.
2. Due to the low capacity of the air pollution control facility at the Bac Ninh plant, the filters became clogged, blocking the passage of contaminated air. Instead of changing them, the company removed some of them and discharged dust and toxic chemical-containing pollution directly into Vietnam's air.
3. For three years of operation, Samsung's Bac Ninh plant did not have a wastewater treatment facility to treat toxic chemical-containing production wastes and they were quietly illegally dumped into the environment.
4. Raw sewage from Samsung Electronics' Bac Ninh factory overflowed into the environment illegally for years without purification.
5. The Bac Ninh factory lacked local exhaust systems in areas where toxic chemicals were used, so workers were routinely exposed to toxic chemical fumes.
6. Unsound management of wastes at Samsung's factories in Vietnam included failure to separate general and designated wastes. Inadequate outdoor storage of wastes resulted in further pollution.
7. Samsung's top-level management at headquarters was informed about severe air and water pollution at the company's Bac Ninh plant in Vietnam but remained silent. The Future Strategy Office, which served as the de facto top management organization to advise the Chairperson of the Samsung conglomerate, was aware of the serious pollution problems at the company's Bac Ninh factory, but took no action to resolve them.
8. Samsung's Global Environmental Health and Safety (EHS) Center at company headquarters conducted a special inspection of the Bac Ninh factory and found a wide range of violations of company policy, including air pollution, water pollution, and unsound waste management. However, in its routine reports, it gave top marks to the facility for air pollution control and wastewater treatment. This contradiction suggests that the role of the Global EHS Center is to give the appearance of good factory management while ignoring problems revealed by Samsung's own inspections.
9. Instead of upgrading its undersized air pollution control facility at the Bac Ninh plant, Samsung outsourced its most toxic operations to its suppliers in 2017. This transferred severe air pollution problems to other communities that are currently ongoing.
10. In 2018, Samsung's Thai Nguyen mobile phone factory generated 90% of all hazardous wastes in the province, despite the presence of many companies manufacturing products known to be highly polluting such as cement, chemicals, electronics, plastics, and steel.
11. As recently as 2021, the EHS group at Samsung's appliance factory in Ho Chi Minh City also found significant non-compliance issues including water pollution and chemicals leaking inside the factory, exposing workers.
12. Samsung significantly weakened standards in its factories and suppliers for changing activated carbon to adsorb toxic chemicals for air pollution control from once a month to once every three months. An internal EHS team investigation found many facilities in Vietnam that had not changed the activated carbon for 1 – 3 years, violating the original company policy by 12 – 36-fold.
13. Many findings about the extensive air and water pollution at Samsung's Bac Ninh plant emerged as a result of company investigations in 2012, but the company's 2013 Sustainability Report which reported on actions in 2012, ironically noted that the company has a *"commitment to sustainable development and social responsibility through eco-driven business and management activities."* In contrast to the results of its own investigations, the Sustainability Report claims that *"harmful effects are minimized and environmental incidents are prevented at the source."* Pollution problems continued to be identified after 2012, but Samsung's Sustainability Reports hid this fact.

14. The 2013 Sustainability Report section on air pollutant management, states that the company has been, *“installing optimal prevention facilities when increasing new production lines, and continuously performing efficiency enhancement activities at its prevention facilities.”* However, the company built the Bac Ninh plant with inadequate, incorrectly sized air pollution control facilities and then failed to resolve that problem and instead operated it in violation of Samsung’s own regulations by removing both filters and activated carbon, resulting in the discharge of polluted air.
15. The 2013 Sustainability Report section on wastewater management states that, *“Samsung Electronics discharges all wastewater generated by its workplaces after processing it at internal processing facilities”* and that all discharge water is monitored. However, the company’s investigation showed that the Bac Ninh factory did not even have a wastewater treatment facility for three years of operation and just dumped toxic wastewater directly into the environment.
16. The 2022 Sustainability Report which reported on actions in 2021, claims that all chemicals *“are stringently controlled”* and that *“all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems.”* However, in 2021, Samsung’s Ho Chi Minh Plant EHS Group documented violations of company policies at its appliance factory in Ho Chi Minh City including discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment, and chemicals leaking inside the factory, posing a danger to workers.
17. Samsung has operated in Vietnam using double standards by ignoring measures they must routinely follow in South Korea. The lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that Samsung could keep extensive pollution hidden from regulators and the public. In contrast, emissions of more than 400 substances from Samsung Electronics’ factories in South Korea are publicly reported through the country’s PRTR system. The company refused to report emissions in Vietnam, while doing so in South Korea.

## INTRODUCTION

Samsung Electronics’ first mobile phone factory in Vietnam is in Bac Ninh province. The plant began operation with the phone assembly process in 2008 and added the painting process in 2010. Later in 2017 and 2018, the company outsourced toxic chemical-intensive processes to its suppliers (please see Chapter 3).

Analysis for this report used internal documents from Samsung’s EHS teams provided by the Samsung whistleblower. This report reveals company documentation of compliance violations with Samsung’s policies at the company’s factories in Vietnam primarily from 2012 - 2021. The focus is on Samsung’s Bac Ninh mobile phone factory, but information about the company’s Ho Chi Minh appliance factory is also included. Internal investigations by Samsung’s EHS departments found extensive non-compliance with company EHS policies including air pollution, water pollution and unsound waste management. Taken together, the company’s internal documents reveal a consistent pattern of Samsung externalizing the costs of pollution from production of mobile phones and appliances onto Vietnam’s environment.

## ELEMENTS OF AIR POLLUTION CONTROL FACILITIES

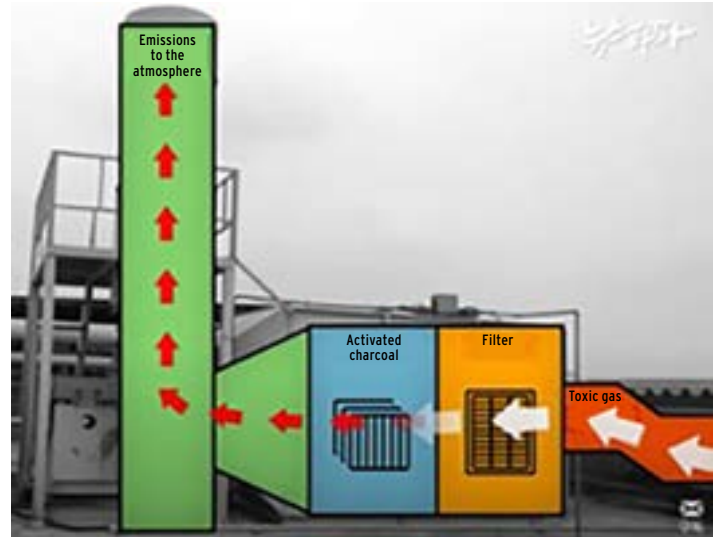
Chemical odors are often found near factories and in industrial parks where factories are clustered because chemicals are being released into the air due to inadequate operation of air pollution control facilities. Samsung Vietnam’s factories and suppliers primarily operate air pollution control facilities that use activated carbon, various types of filters, and scrubbers.

The filters in an air pollution control facility trap dust. When the filter accumulates a lot of dust, it becomes difficult for polluted air to pass through, so the filter should be replaced before then.

After passing through the filter, the air passes through activated carbon to adsorb and remove chemicals. For this process to work properly, enough evenly distributed activated carbon must be placed in the path of the contaminated air. Since activated carbon will stop adsorbing contaminants once it has become saturated, it should be replaced before that happens.

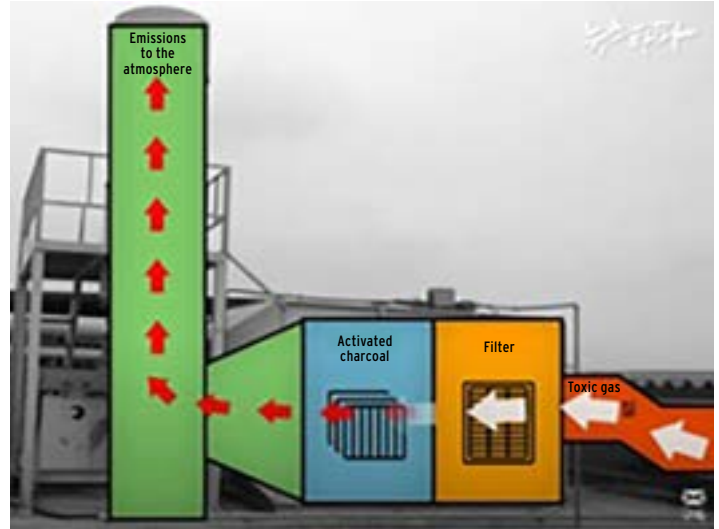
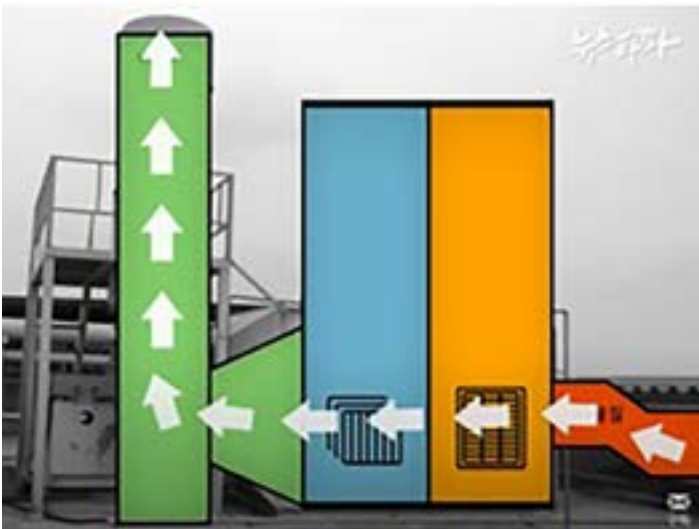
Scrubbers are often used in processes involving large amounts of hazardous chemicals, such as painting and plating. Regular maintenance includes replacing or cleaning this equipment at appropriate intervals. One fundamental aspect of designing air pollution control facilities is that they must have sufficient capacity to purify the quantity of polluted air generated during factory operations.

## A FUNDAMENTAL DESIGN FLAW IN AIR POLLUTION CONTROL



(Left) Air pollution control facility at Samsung Electronics' Bac Ninh plant; (Right) Graphic showing elements of the air pollution control facility at Samsung Electronics' Bac Ninh plant.

Samsung's Bac Ninh factory had a fundamental design flaw in its air pollution control facility: it simply lacked the capacity to handle the factory's output. This serious flaw was documented internally by the whistleblower in a report to headquarters after inspecting the Bac Ninh plant.<sup>1</sup> Surprisingly, Samsung Electronics did not hire a company with EHS experience in large electronics factory operations to design and install the air pollution control facility at the Bac Ninh plant. Instead, Samsung hired a company that installs paint application systems. This surprisingly inept management decision resulted in a fundamental design flaw that released severe chemical pollution into Vietnam's environment for years.



Graphic indicating the required capacity of the air pollution control facility (left) and actual facility capacity at Samsung's Bac Ninh plant (right).

The capacity of the air pollution control facility installed by the paint systems company was so low that the filters would become very dusty and clogged with dust in just a few days. They were so clogged that air could not pass through them at all. Instead of stopping the production line frequently to change the filters or, more fundamentally, expanding the capacity of the air pollution control facility, Samsung moved some of the filters and activated carbon to the side, as shown in the photo below, so that the polluted air could be directly discharged to the environment unobstructed. Since the polluted air was not effectively purified by filters or activated carbon, it was the same as having no air pollution control facility. Unless the plant was shut down and the space where the filters and activated carbon are located was opened, the problem was not visible. This is why it was difficult for outside observers to see exactly what was going on at the Bac Ninh plant, as they were not authorized to shut down the plant.



Polluted air is purified as it passes through filters and activated carbon in an air pollution control facility (top left). At Samsung's Bac Ninh plant, however, instead of replacing the filter when the dust completely clogged it and no air could pass through, the filter was moved aside to allow polluted air to pass through (bottom left), which caused the activated carbon to become so full of dust that it could not function (top right). As a result, the dust was not removed, leaving a thick layer of dust around the air pollution control facility (bottom right).

Nearby residents noted that the terrible smells began when the Samsung factory started operating. Residents said that the horrible odors were like torture and that coughing and frequent sickness resulted from breathing factory emissions.<sup>2</sup>

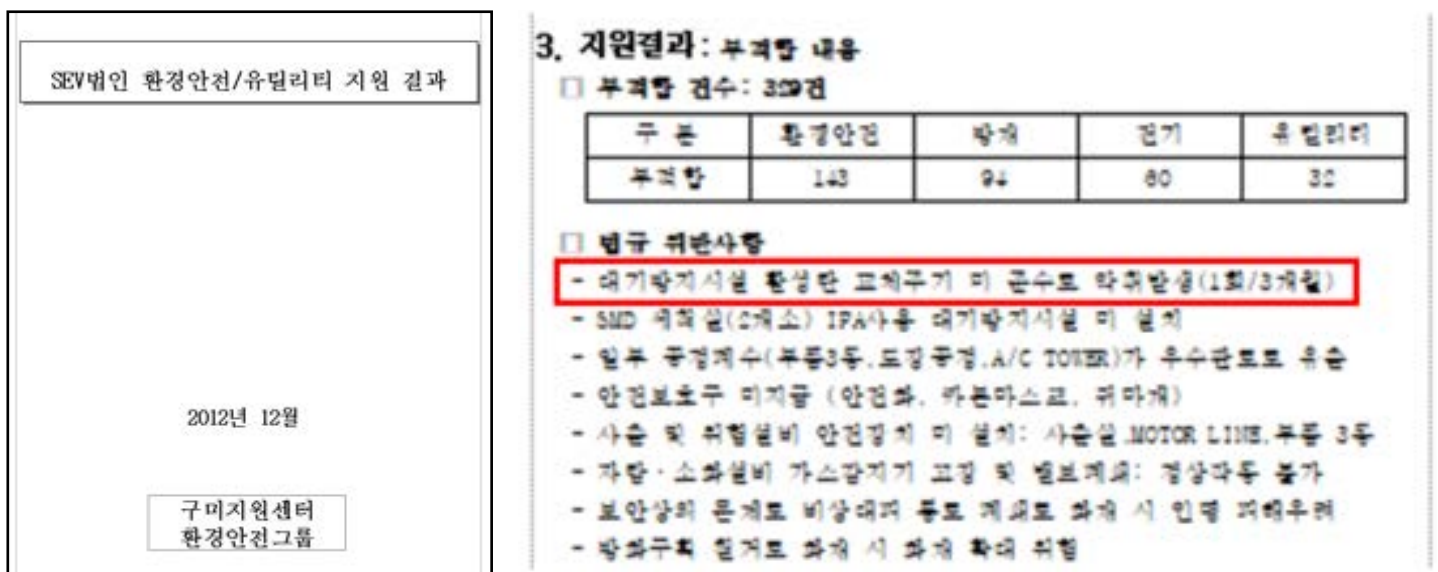
To avoid emissions of polluted air, it would have been necessary for Samsung to invest in increasing the capacity of the air pollution control facility at the Bac Ninh plant. However, the company did not bear the cost of fixing the facility at the Bac Ninh plant to protect the environment. Instead, Samsung outsourced toxic chemical-intensive processes that emit a lot of polluted air, such as plating, painting, and printing processes, to its suppliers in 2017 and 2018. Overall, these companies have even less EHS infrastructure and awareness than Samsung Electronics (please see Chapter 3)<sup>3</sup> As a result, while Samsung appeared to solve some of its air pollution problems at the Bac Ninh plant, the company did not address the problem of polluting the air in Vietnam. Polluting operations needed for mobile phone production continued at its suppliers.

One example of the consequences of outsourcing toxic processes to Samsung suppliers is the air pollution from SIT Vina, a South Korean company and Samsung supplier in Bac Ninh Province.<sup>4</sup> The company manufactures electronic components for Samsung mobile phones and has paint-spraying processes. Toxic chemicals including carcinogens are intensively used in the painting process, which is one of the toxic processes that Samsung's Bac Ninh factory outsourced to its suppliers to solve the factory's air pollution problems. Paint dust is emitted from the chimneys of SIT Vina, which means that the air pollution control facility is ineffective. Paint dust and toxic gases from the painting process are emitted from the factory without being treated by filters and activated carbon, which is the same situation that occurred at Samsung's Bac Ninh factory. Speaking to VTC News, Dr. Nguyen Van Thuyen of the Van Duong Ward Health Center said, *"In recent years, the number of local people suffering from respiratory diseases such as sore throat, rhinitis, allergies, chest tightness and shortness of breath has increased, and the number of cancer patients has also increased, mainly lung cancer,"* and *"Since the beginning of 2022, we have had about 10 cancer patients in our ward, but there may be many more who have not been identified."*<sup>5</sup>

SIT Vina is a second-tier supplier to Samsung. The whistleblower noted that, “Based on my experience visiting second-tier suppliers, I can say that cases like SIT Vina are not uncommon. In Samsung’s supply chain, the contribution of second-tier suppliers to Samsung’s mobile phone production is significant, but Samsung does not have clear information about them. In addition, Samsung’s EHS management of its suppliers only targets first-tier suppliers, leaving others that are virtually unmanaged.” For more information about this case and about suppliers, please see Chapter 3.

## AIR POLLUTION CONTINUES AS SAMSUNG’S FACTORIES IGNORE ACTIVATED CARBON REPLACEMENT

In December 2012, the EHS group from Samsung Electronics’ mobile phone factory in Gumi, South Korea, visited the company’s Bac Ninh Plant in Vietnam to investigate EHS issues. The report, entitled “Results of SEV [Samsung Electronics Vietnam] Corporate Environmental Safety/Utility Support,” pointed out that the frequency of replacing activated carbon was substantially weakened from once a month to once every three months. However, the inspectors noted that even this diminished replacement frequency was not being followed, resulting in foul odors.<sup>6</sup> This finding indicates that the company could not even follow its own significantly weakened standard for replacement of activated carbon.



Inspection report of Samsung’s Bac Ninh Plant by the company’s EHS group from Samsung Electronics’ mobile phone factory in Gumi, South Korea, in December 2012. The figure shows the cover page (left) and description of compliance violations (right). The part circled in red says, “Non-compliance with replacement frequency of activated carbon (once per 3 months) resulting in bad odors.”

## SAMSUNG’S TOP-LEVEL MANAGEMENT KNEW ABOUT THE SEVERE AIR POLLUTION FROM ITS FACTORY IN VIETNAM

The severe air pollution problem at Samsung’s Bac Ninh plant was well-known to high-level managers at company headquarters as early as 2010. Later, the company’s Future Strategy Office also became involved in this issue. The Future Strategy Office was the de facto top-level organization of Samsung Group advising the Chairperson of the conglomerate. The Future Strategy Office consisted of approximately 200 people from various Samsung companies, including approximately 60 key executives such as Lee Jae-yong, the current Samsung Group Chairperson.<sup>7</sup> The organization is now defunct and reduced to an organization with a different name due to Lee Jae-yong’s illegal actions to take over Samsung Group.<sup>8,9,10</sup> As noted by the whistleblower, “The Future Strategy Office sent two experts specialized in odor issues to the Bac Ninh plant in Vietnam to check the odor problem.”<sup>11</sup> After the visit to Vietnam by the specialists from Samsung’s top management group, the severe air pollution problem continued at the Bac Ninh factory for several more years.

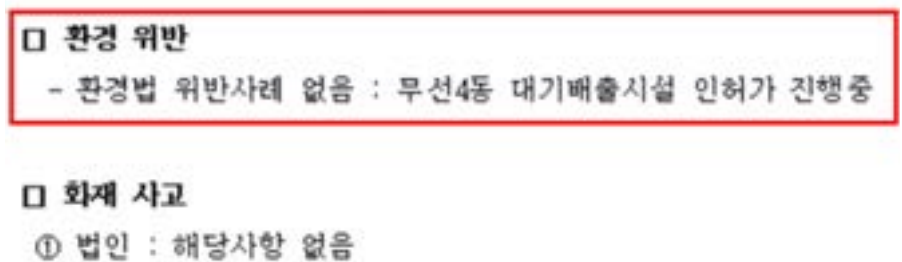
## SAMSUNG WEAKENS ITS OWN STANDARDS FOR OPERATING THE AIR POLLUTION CONTROL FACILITY

Samsung's policy required replacing the activated carbon in the air pollution facility once a month. That frequency was insufficient to prevent air pollution due to the undersized design of the facility. However, Samsung did not even comply with its own poor standard. Replacing the filters and activated carbon requires stopping the production line for a short period of time, and Samsung apparently did not want to stop making mobile phones, even if it meant polluting the environment. This fact has been confirmed by multiple Samsung investigations and is clearly stated in the investigation reports on the Bac Ninh factory prepared by the Gumi Plant EHS Group and the Global EHS team at the company's headquarters.

The company loosened its air pollution standard to replacement of activated carbon every three months, despite knowing that this violated the design of its own air pollution control facility and without having any data to demonstrate that this replacement cycle would effectively remove toxic chemicals from being emitted into Vietnam's air. In effect, the company simply gave up trying to clean its factory's toxic air emissions. Community residents noted that, "The smell is so bad that many people have moved to other places" and "People are coughing and catching colds because the pollution is so bad."<sup>12</sup>

## COVERING UP THE AIR POLLUTION PROBLEM INTERNALLY

Although the severe odor problems at Samsung's factories in Vietnam were well known internally for many years, they were not mentioned in the routine inspections by the Global EHS Center at Samsung headquarters. For example, the Global EHS Center's 2012 report "Environmental Safety/Utility Diagnosis Results for SEV [Samsung Electronics Vietnam] Corporations," does not mention the odor issue at all. It does not mention any problems with air pollution control facilities and states that there were no violations of environmental laws.<sup>13</sup>



August 2012 Samsung Electronics Global EHS Center's inspection report on the Bac Ninh plant, cover page (left), and the part stating no violations of environmental laws (right). The part circled in red states: "Environmental violation: - No cases of violation of environmental regulations: Certification/permission on the air discharging facility building "Wireless 4" is in progress."

The results of the 2012 "Environmental Safety Audit Checklist" used in this report were also inaccurate and contradictory.<sup>14</sup> In the checklist, the item "Are air emission facilities and control facilities legally managed?" received a score of A — the highest available score. An evaluation score of A means: 1) that the capacity of the control facility is installed with a margin of emissions of more than 30% compared to the actual levels of emissions; 2) the pollutant emission concentration is below 50% of the legal standard; and 3) the control facility management standard compliance is 100%. In reality, the air pollution control facilities in the Bac Ninh plant were simply too limited to deal with the amount of polluted air produced by the plant. According to the company's checklist, the best score an honest evaluation could have given the factory would have been a C, indicating poor installation and management of facilities.

NO	체크항목	체크포인트		평가가이드				Weight	평가수준 (A,B,C,D ,N/A)	평가 점수
		국문	A	B	C	D				
20	대기배출시설 및 방지시설을 적법하게 관리하는가?	배출시설 및 방지시설 현황, 사업장 대기 배출허용기준, 배출농도 시험실적서(In, Output), 정전시 대응 현황, 각시설별 운전매뉴얼	1) 방지시설 여유율 30%이상 2) 배출농도 법적기준 50% 이내 3) 방지시설 관리기준 100%준수(운전매뉴얼 등)	1) 방지시설 여유율 10% 2) 배출농도 법적기준 80% 이내 3) 방지시설 관리기준 100%준수 (운전매뉴얼 등)	1) 시설설치 및 운영관리 미흡	배출시설은 있으나 방지시설 없음	100	A	100	
21	오수, 폐수배출시설 및 방지시설을 적법하게 관리하는가? ※ 오수처리시설 포함 (정화조 형식 제외)	배출시설 및 방지시설 현황, 사업장 수질 배출허용기준, 배출농도 시험실적서(In, Output), 정전시 대응 현황, 각시설별 운전매뉴얼	1) 방지시설 여유율 30%이상 2) 배출농도 법적기준 50% 이내 3) 방지시설 관리기준 100%준수(운전매뉴얼 등)	1) 방지시설 여유율 10% 2) 배출농도 법적기준 80% 이내 3) 방지시설 관리기준 100%준수 (운전매뉴얼 등)	1) 시설설치 및 운영관리 미흡	배출시설은 있으나 방지시설 없음	100	A	100	

Results of the checklist for the environmental safety audit at the Bac Ninh plant prepared by Samsung Electronics Global EHS Center in August 2012. Row No. 20 says "Are air pollution emission and prevention facilities legally managed?"

Row No. 21 says "Are sewage and wastewater discharges and prevention facilities legally managed?"

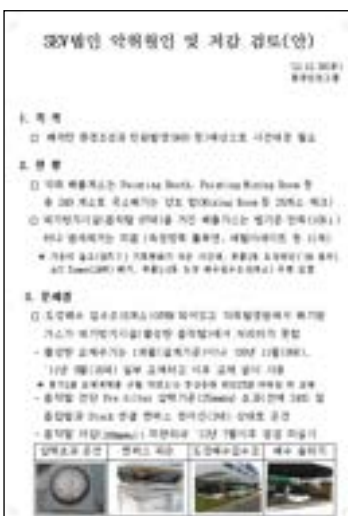
Boxes A, B, C, and D indicate the criteria to get scores of A, B, C or D for each row. The final score is on the far right.

The two columns on the right show that the audit gave the highest evaluation, A, with the highest points, 100, for both items.

Box A circled in red indicates criteria for a score of A and says: "An evaluation score of A means: 1) that the capacity of the control facility is installed with a margin of emissions of more than 30% compared to the actual levels of emissions; 2) the pollutant emission concentration is within 50% of the legal standard; and 3) the control facility management standard compliance is 100%."

## SAMSUNG INVESTIGATION REVEALS GROSS VIOLATIONS OF SAMSUNG'S AIR POLLUTION CONTROL POLICIES

In November 2012, three months after the Global EHS Center had given a top score to the air pollution control facility at the Bac Ninh plant, the Center wrote a report on the odor issue entitled, "Review of Sources and Reduction of Odors at SEV Corporation."<sup>15</sup> The Global EHS Center report noted that Samsung Electronics' Bac Ninh plant did not comply with the design standard of changing the activated carbon every month. In fact, 16 air pollution control units in the Bac Ninh plant did not replace the activated carbon for more than a year, violating the company's original standard by 12-fold. Eight units did not replace the activated carbon for more than three years, violating the company's original standard by 36-fold. In addition, there were three reported cases where air pollution control facilities could not be operated normally because the facilities for moving polluted air were damaged. The report recommended negotiating a line shutdown schedule with the production management department so that the activated carbon replacement cycle could be complied with, and replacing the activated carbon adsorption facility with an incineration facility as a countermeasure for the odor problem. None of these recommendations were implemented, presumably because they would increase the cost of mobile phone production for the company. Instead, Samsung reduced production costs by externalizing the cost of its air pollution onto surrounding communities and Vietnam's environment.



### 3. 문제점

□ 도장폐수 집수조(6개소) OPEN 되어있고 악취발생원에서 버기된 가스가 대기방지시설(활성탄 흡착탑)에서 처리하지 못함

- 활성탄 교체주기는 1개월(설계기준)이나 '09년 11월(8대), '11년 9월(16대) 일부 교체하고 이후 교체 없이 사용  
 ※ 분기1회 교체계획을 수립 하였으나 생산증대 라인STOP 어려워 미 교체  
 - 흡착탑 전단 Pre filter 압력기준(25mmHg) 초과(현재 24%) 및 흡착탑과 Stack 연결 캔버스 찢어진(3대) 상태로 운전  
 - 흡착탑 차압(200mmHg) 미관리와 '12년 7월이후 점검 미실시



Investigation report on the foul odors at Samsung's Bac Ninh plant by the Global EHS Center at Samsung Electronics headquarters in November 2012, including the part that points out the problems (left) and the part that describes the causes (right). The part circled in red says: "Activated carbon replacement cycle is 1 month (design standard) but it has been used without being replaced since November '09 (8 units replaced) and September 2011 (16 units replaced).

\*Originally monthly replacement was planned, but it was not implemented due to difficulty in stopping the lines with increased production demand."

## THE ROLE OF THE GLOBAL EHS CENTER AT SAMSUNG HEADQUARTERS: COVERING UP THE FACTS TO SHOW 'PERFECT' RESULTS

The Global EHS Center at Samsung's headquarters is the organization that oversees environmental health and safety issues across Samsung Electronics and generates data for the company's sustainability report, which publicly provides information about Samsung's EHS management practices. In November 2012, a special inspection by the Global EHS Center to diagnose odor problems pointed to serious deficiencies in the management of air pollution control facilities at the Bac Ninh plant. This was also confirmed in an EHS inspection of the Bac Ninh plant in December 2012 by the Gumi Plant EHS Group from Samsung's mobile phone factory in Gumi, South Korea. The fact that the Future Strategy Office dispatched experts to inspect the odor problem in 2013 may be due to recognition of the seriousness of the odor problem at the plant by the top management of the company.

### Samsung's internal investigations of air pollution at Samsung's Bac Ninh plant

INTERNAL INVESTIGATION	MAIN FINDINGS
August 2012: Report by the Global EHS Center; routine inspection	The report stated no problems with air pollution control facilities; no violations of environmental laws; and gave the plant its highest score for compliance.
November 2012: Report by the Global EHS Center; special inspection on the bad odor issue	16 units at the Bac Ninh plant did not replace the activated carbon for more than a year while the original company standard was once a month; 8 units did not replace it for more than three years; 3 reported cases where air pollution control facilities could not be operated normally because the facilities for moving polluted air were damaged.
December 2012: Report by the Gumi Plant EHS Group after a visit to Bac Ninh factory	The plant's standard of replacing activated carbon, which was substantially weakened to replacement once every three months, was not being followed, resulting in foul odors.
Early 2013: The Future Strategy Office recognized the odor problem and sent two odor experts to Vietnam to investigate.	Severe odor problems at the Bac Ninh plant were ignored for four more years.

Only three months before Samsung's Global EHS Center analyzed the odor problem at the Bac Ninh factory, it gave the same plant a top score for compliance during a routine comprehensive EHS inspection. The report did not mention the serious air pollution issue. The reason for this can be traced back to the experience of the Samsung whistleblower when he worked at Samsung's Global EHS Center. During an inspection of Samsung's semiconductor and home appliance factories in Suzhou, China, the team leader allegedly told his team members, *"Don't score lower than last year's assessment."*<sup>16</sup>

The internal reports about air pollution at Samsung's Bac Ninh factory reveal that the aim of Samsung's Global EHS Center's routine inspections is not to find problems but to report perfect compliance results, even if it means covering up problems. These perfect compliance results are then aired publicly in Samsung's sustainability reports. Samsung's culture of secrecy explains why EHS noncompliance issues are rarely found in the company's sustainability reports.

## NO WASTEWATER TREATMENT PLANT RESULTS IN WATER POLLUTION AT SAMSUNG'S BAC NINH PLANT

Industrial wastewater must enter a wastewater treatment facility to be cleaned before discharge. If wastewater is discharged without treatment, it will seriously pollute the surrounding environment with toxic chemicals including waterways, sediment, and soil. However, Samsung's Bac Ninh plant was not properly equipped with a wastewater treatment facility from the start of its operation in 2008 until early 2013, when the whistleblower visited the plant to conduct facility improvements. That means for at least three years, since 2010 when the painting process began to operate, toxic chemical-containing wastewater from the Bac Ninh plant was discharged externally into rivers and soil. This means that some of the costs involved in making Samsung mobile phones in Vietnam have been paid by the surrounding community and the environment.

Nearby residents said that before the Samsung's Bac Ninh factory began operating, the land was green farmlands. After the factory started operation, residents could no longer grow rice.<sup>17</sup> Newstapa reported that, *"local communities are suffering from loss of livelihoods and health issues. However, neither thorough environmental investigation nor compensation has been pursued."*<sup>18</sup> Samsung's dumping of toxic wastewater offloaded the cost of pollution from the company to Vietnam's environment and residents. The company reduced its own costs and did not take responsibility for its pollution. Samsung's actions violate a key chemical safety principle that environmental costs should be internalized and that, *"the polluter should, in principle, bear the cost of pollution."*<sup>19</sup>

## HOW SAMSUNG'S BAC NINH FACTORY DISPOSED OF TOXIC WASTEWATER

Since a proper wastewater treatment facility did not exist at the Bac Ninh plant, the company dumped toxic wastewater directly into the environment in a variety of ways. Storm drains leading to the environment were used as dumps for toxic chemical-containing wastewater that did not undergo any purification process. The sewage treatment facility which was designed for the company's cafeterias and bathrooms could not handle production wastes since the toxic chemicals in industrial wastewater would kill the microorganisms that purify sewage. As a result, there was no effective treatment of toxic wastewater. Samsung also had a 'solution' for toxic chemical waste from chemical tanks. A former worker at the Bac Ninh plant in charge of cleaning these tanks noted that, *"the company subcontracted to do the disposal would dump the materials into a nearby river."*<sup>20</sup> Oil and chemicals have also leaked from outdoor facilities and chemical storage. The dumping of toxic wastewater was not as obvious as the horrible odors emanating from the factory, but it did capture the attention of Samsung's upper management.



The sewage treatment facility at Samsung Electronics' Bac Ninh plant was not designed to handle industrial wastewater. So, Samsung simply dumped their toxic wastewater directly into the environment for years until the wastewater treatment facility was built.

## SAMSUNG'S EHS TEAM DOCUMENTS WATER POLLUTION PROBLEMS AT THE BAC NINH PLANT

In December 2012, a report on Samsung's Vietnam plant by the Gumi Plant EHS Group from Samsung Electronics' mobile phone factory in Gumi, South Korea, entitled, *"Results of Environmental Safety/Utility Support for SEV Corporation,"* pointed out that *"some process wastewater (from the building 'Part 3', painting process, and air pollution control facility) is leaking into storm drains."*<sup>21</sup> The company's EHS team documented a wide variety of water pollution problems at the Bac Ninh plant.

Some of the water pollution problems were compounded by the inadequate air pollution control facility described above. In the painting process, wastewater particles are generated from the water screen that recovers the paint sprayed into the atmosphere. However, due to the inadequate design of the air pollution control facility, there was no device to block these wastewater particles, so the toxic wastewater from the painting process was discharged through the air pollution control facility, as seen in the photos below.



Painting process wastewater flowing out of the air pollution control facilities at the Bac Ninh plant.

The photos below show a leak from a water screen circulation pump of a painting process, causing wastewater to be discharged into the soil around the facility. Despite the continuous leakage of industrial wastewater, no repair work was done to stop the leakage, and no spillway was installed to prevent the leaked wastewater from contaminating the environment. While Samsung ignored the defective equipment, wastewater from the painting process, which uses the most harmful substances, continued to be discharged through the air pollution control facilities and circulation pumps, and when it rained, it flowed into nearby rivers through storm drains and contaminated the surrounding soil.



A leak from a water screen circulation pump of a painting process, causing wastewater to leak out.



Wastewater leaking from the painting process wastewater treatment facility contaminating the storm drainage system.

As shown in the photos below, it was also confirmed that the chemicals collected in the collecting tank in the waste chemical storage area of the Bac Ninh factory were discharged directly into the external drainage system without going through any purification facilities.



Waste chemical storage (left), a collection tank inside the waste chemical storage (top right), and an external drain connected to a collection tank inside the storage (bottom right).

Occasionally, Vietnamese news media has documented leaks at Samsung facilities. For example, in 2017, a media outlet posted a video of foam squirting up out of the sidewalk outside of Samsung's Thai Nguyen mobile phone factory.<sup>22</sup> Mr. Tran Van Long, Deputy Director of the Industrial Zones Management Board of Thai Nguyen Province said, *"That is industrial wastewater. This wastewater is collected from Samsung to the Yen Binh wastewater treatment plant. The place where it leaks is where the manhole is installed."*<sup>23</sup> He also added that, *"the authorities have taken samples of the white foam for testing."* A representative of the Environmental Protection Department (Department of Natural Resources and Environment of Thai Nguyen province) confirmed the information above and added, *"This wastewater meets all standards. During the process of pumping to the treatment center it was pumped too hard, so this incident happened."* However, the authorities did not provide the results of the test.<sup>24</sup>

## SAMSUNG'S EHS TEAM RAISES CONCERNS ABOUT LEGAL ISSUES DUE TO WASTEWATER DUMPING

In December 2012, a report on Samsung's Bac Ninh plant by the Gumi Plant EHS Group from Samsung Electronics' mobile phone factory in Gumi, South Korea entitled, *"Results of Environmental Safety/Utility Support for SEV Corporation,"* warned that *"wastewater is generated, but legal issues may arise due to the delayed construction of the wastewater treatment facility."*<sup>25</sup> In 2023, Newstapa reported that, *"The report went to the top management of Samsung Electronics. In particular, the problem of wastewater leakage was said to be a problem that only a few executives knew about, unlike the odor problem that spread throughout the factory."*<sup>26</sup>

The Samsung whistleblower noted that while the air pollution issue seemed bigger, deep inside the company, “the illegal disposal of the wastewater was more problematic.”<sup>27</sup> The whistleblower said that “one would expect that Samsung Electronics was not supposed to tolerate that. But it was happening. The situation was devastating. In Korea, even sub-contractors should not do that.”<sup>28</sup> The senior management responded to the toxic wastewater dumping in the same way as the air pollution issue: “It was keeping silence until time resolves everything.”<sup>29</sup>

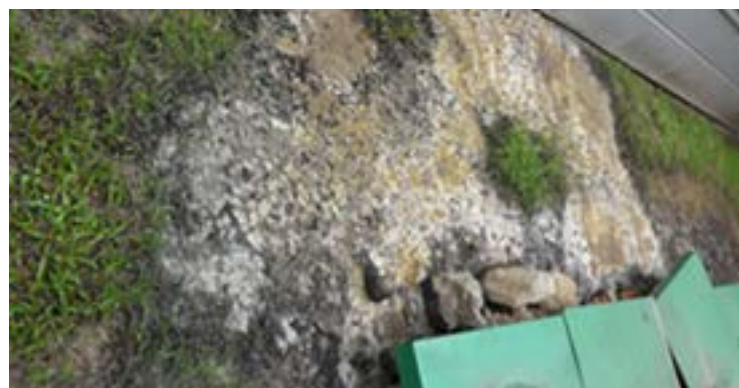
## CONTRADICTION INTERNAL COMMUNICATIONS ABOUT THE WATER POLLUTION PROBLEM AT THE BAC NINH PLANT

In the “2012 Environmental Safety Assessment Checklist” prepared by Samsung Electronics for its Bac Ninh plant, the company asked itself this question: “Does the company legally manage sewage and wastewater discharge facilities and prevention facilities?”<sup>30</sup> Samsung’s answer was to give itself the best rating of A. Ironically, the factory did not even have proper sewage and wastewater treatment facilities. An A rating means that the pollution prevention facility has more than 30% of extra capacity, the pollutant concentration of discharge is below 50% of the legal standard, and the pollution prevention facility management standards are 100% complied with. This is a good example of how bad news about Samsung’s non-compliance with company standards was covered up, even internally.

The practice of giving good scores to factory operations is standard Samsung operating practice. For example, as noted above, during an inspection of Samsung’s semiconductor and home appliance factories in Suzhou, China, the team leader allegedly told his team members, “Don’t score lower than last year’s assessment.”<sup>31</sup> This illustrates a company culture that hides problems despite internal company investigations that reveal serious issues. Once these issues are covered up, Samsung’s sustainability reports give a false impression of the company’s EHS management record.

## DISCHARGE OF RAW SEWAGE TO THE ENVIRONMENT AT SAMSUNG’S BAC NINH PLANT

Raw sewage from Samsung Electronics’ Bac Ninh factory overflowed for years without purification. Due to poor management of the sewage pipes, the drainage pipes were left unattended when they became clogged. As a result, the sewage could not be transported to the treatment facility and instead overflowed into the surrounding environment as shown in the photos below. This improperly leaked sewage contaminated the soil in the surrounding area, and when it rained, it polluted waterways through the storm drains.



Sewage building up inside tank (left). Overflow of this tank (upper right) with soil contamination (lower right) caused by overflowing sewage tank at the Bac Ninh factory.

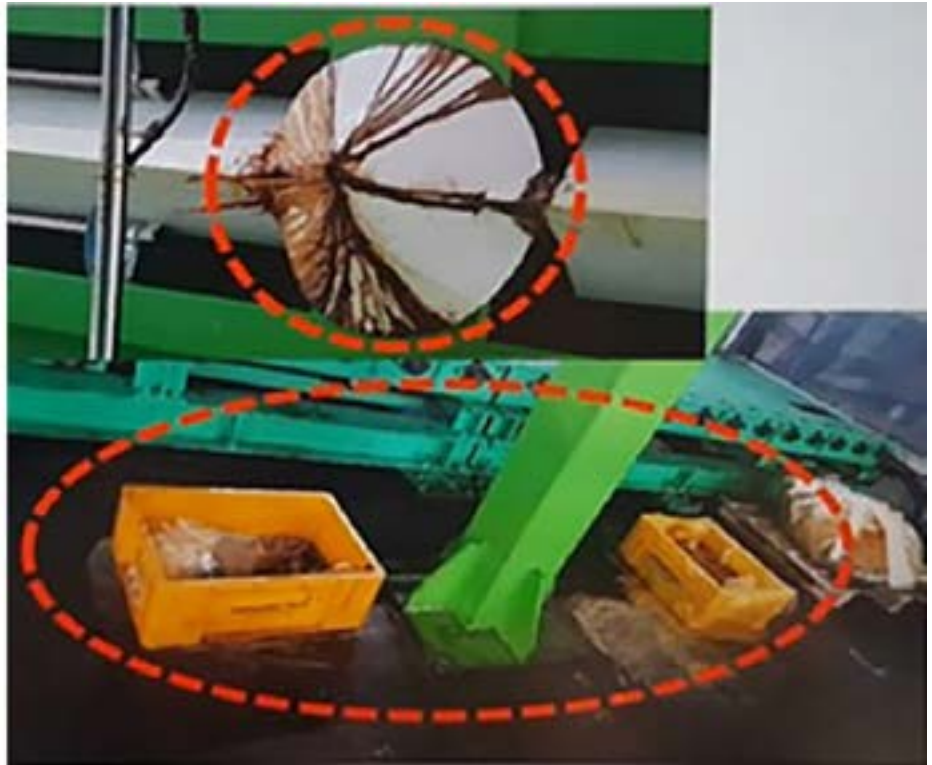
## WATER POLLUTION AT SAMSUNG'S APPLIANCE FACTORY IN HO CHI MINH CITY

The photos below show the leakage of waste liquid from a storage tank at Samsung Electronics' Ho Chi Minh City plant in Vietnam in February 2021. The waste liquid was generated from the polyurethane insulation process during the production of refrigerators and was discharged into the surrounding rivers through storm drains without any purification.



Waste chemicals from Samsung's Ho Chi Minh City factory in 2021 leaking from a storage tank into a stormwater channel leading into the environment.

The photos below are also from Samsung Electronics' Ho Chi Minh City factory in February 2021. Chemicals are leaking from the chemical supply room on the second floor and falling through the ceiling to the first floor. Yellow containers are placed to catch the chemicals, but the floor area around the containers is also contaminated.



At Samsung's Ho Chi Minh factory, chemicals are leaking from the chemical supply room on the second floor and falling through the ceiling to the first floor. Yellow containers are placed to catch the chemicals, and the area around the containers is contaminated.

The photos on the right show Samsung's Ho Chi Minh City factory in 2021, where an oil spill from a press machine (top) and a chemical leak from a refrigerator production line (bottom) were left to contaminate the factory floor. In this case, not only can hazardous chemicals contaminate the environment through storm drains, but they can also volatilize and pollute the air and put workers at risk of slipping and falling. The fact that these basic EHS issues were still occurring in 2021 illustrates how Samsung has still failed to achieve proper chemicals management at its factories in Vietnam.



Oil and chemical leaks around production facilities at Samsung's Ho Chi Minh City plant are left unattended.

## OIL AND CHEMICAL LEAKS INTO THE ENVIRONMENT AT SAMSUNG'S BAC NINH PLANT

In the previous cases of illegal discharge of chemical wastewater and sewage at Samsung's Bac Ninh factory in Vietnam, most of the wastewater and sewage were flowing into storm drains because no barriers were installed.

The photo below shows the chemical waste storage at Samsung's Bac Ninh factory. Waste chemicals are piling up on top of the containers, leaking out of them, and contaminating the floor of the storage area. Places where chemicals or designated wastes are stored should be equipped with facilities to prevent the spread of chemicals, such as leakage prevention barriers, so that chemicals do not spread outside even if they leak. However, the Samsung Vietnam factory did not have leakage prevention barriers, and the chemicals were contaminating not only the inside of the storage room but also the outside environment.



Waste chemicals pooled on top of storage containers and spilled inside and outside the storage area, contaminating the floor and the outside environment at Samsung's Bac Ninh plant.

Even when the company finally installed leakage prevention barriers, their function and maintenance were poor. The photo below on the left shows that inside a wastewater treatment facility with a berm, the chemicals used to treat wastewater leaked and spilled over the berm and were touching the wall. Since there are gaps between the panels that make up the wall, the chemicals leaked through the walls and ran down the outside wall of the wastewater treatment facility, seeping into the soil outside as seen in the photo below on the right. This leakage contaminates the surrounding soil and flows through storm drains into waterways.



The chemicals to treat wastewater such as NaOH or  $Al_2(SO_4)_3$  leaking from a wastewater treatment facility tank over the leak prevention barrier and out of the facility.

## LACK OF LOCAL EXHAUST SYSTEMS POLLUTES THE WORK ENVIRONMENT

A local exhaust system is a facility that collects polluted air from each process and sends it to an air pollution control facility. If a local exhaust system is not installed, workers are exposed to harmful chemicals in the polluted air. If ventilation is done through vents or windows, the polluted air is discharged without purification directly outside the factory, affecting nearby workers and residents along with the environment.

According to the results of an inspection conducted by the Gumi Plant EHS Group from Samsung's mobile phone factory in Gumi, South Korea, two cleaning rooms in the Bac Ninh factory that used isopropyl alcohol (IPA) were not equipped with air pollution control facilities. An investigation by the Global EHS Center at Samsung Electronics' headquarters also pointed out that six basins of painting wastewater were not equipped with any air pollution control facilities and the basins were not sealed, resulting in unauthorized discharge of pollutants into the air. The photo on the right shows a collecting basin for wastewater generated after the paint spraying process at Samsung's Bac Ninh factory. Since the basin is completely open and there is no local exhaust system, the foul odor of toxic chemical wastewater is inevitably released inside the factory and outside the factory, exposing both workers and community residents.

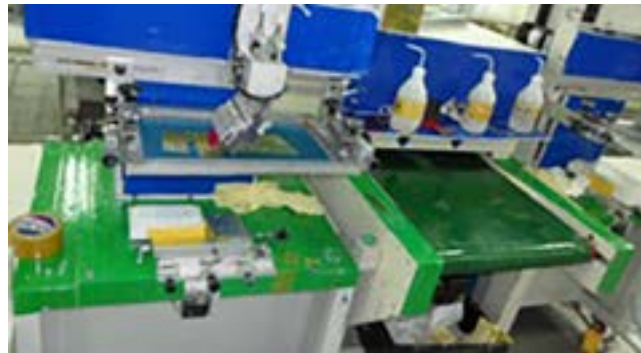


Failure to install a local exhaust system in the paint spray wastewater treatment area of the painting process at Samsung's Bac Ninh factory in Vietnam results in the release of toxic chemicals.

According to the same inspection of the Bac Ninh factory by the Gumi Plant EHS Group from Samsung's mobile phone factory in Gumi, South Korea, there were many other production areas where toxic chemicals were being used but local exhaust systems were not installed. For example, the following processes did not have a local exhaust system: the printing process, the ink measuring and dilution process, the injection molding process, and the waste storage booth. The EHS team audit identified specific production processes that were not equipped with local exhaust systems:

- 1) the two surface-mounted devices (SMD) processes in Wireless Building 1;
- 2) the printed circuit board and solder mask cleaning rooms in Wireless Building 2;
- 3) the Auto Fog and silicone dispensers that use isopropyl alcohol (IPA), marking equipment and manual soldering process in Component Building 3;
- 4) SMD process, injection room, and primer booth in Part Building 1;
- 5) two printing processes, ink metering and dilution room, and IPA cleaning facility in Part Building 2;
- 6) injection room, printing process, and resin drying room in the cleaning machine building; and
- 7) manual soldering process in the dining room building.

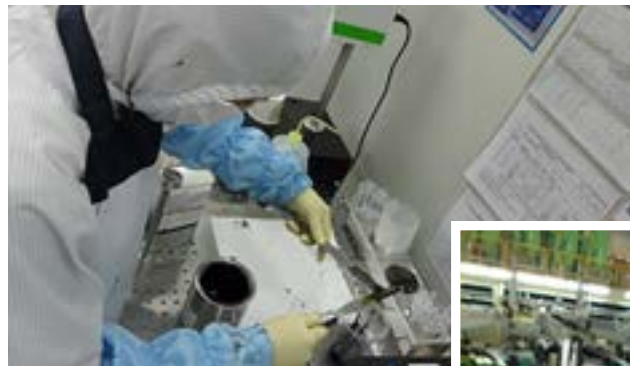
These are all hazardous processes that emit large amounts of chemicals in polluted air and must be equipped with local exhaust systems for occupational and environmental safety. Photos illustrating these non-compliance issues are shown below.



No local exhaust system installed in the printing process in Samsung's mobile phone factory in Bac Ninh, Vietnam, resulting in the release of toxic chemicals.



No local exhaust system installed in the marking equipment in Samsung's mobile phone factory in Bac Ninh, Vietnam, resulting in the release of toxic chemicals.



No local exhaust system installed in the ink measuring and dilution process at Samsung's mobile phone factory in Bac Ninh, Vietnam, resulting in the release of toxic chemicals.



No local exhaust system installed in the injection molding process at Samsung's mobile phone factory in Bac Ninh, Vietnam, resulting in the release of toxic chemicals.

The primer booth, where waste was stored and generated odors, was also discharging polluted air without using a local exhaust system.

## ■ 문제점

- 위치: Primer Booth
- 지정폐기물, 일반폐기물과 혼합 보관으로 악취발생



## ■ 개선방안

- 배기GAS A/C TOWER에 연결 및 분리수거 필요

A report pointed out the use of a local exhaust system that was not connected to air pollution control facilities. The part circled in red says, "How to improve: The local exhaust should be connected to the air pollution control facility; the general waste and designated waste need to be separated."

## UN SOUND MANAGEMENT OF WASTES AT SAMSUNG'S VIETNAM FACTORIES

In factories that handle hazardous chemicals, a designated waste storage area must be installed. Designated waste and general waste must be stored separately, and designated waste must be protected from leakage. However, Samsung Vietnam's factories often failed to comply with these basic standards. In addition, although designated wastes must be collected by specialized companies, the Bac Ninh factory often handed over designated wastes to collection companies without distinguishing between general and designated wastes. Therefore, most of the designated and general wastes were disposed by the factory without distinguishing between them.

There is some information about waste generation in Thai Nguyen province — a major manufacturing area. In addition to the large Samsung Electronics mobile phone factory, the province includes manufacturing of cement, chemicals, electronics, plastics, and steel, among others. Note that hazardous waste represents approximately 23% of all industrial waste in the province.<sup>32</sup> According to the Department of Natural Resources and Environment of Thai Nguyen province, by the end of 2018, about 60 hazardous waste codes were generated in the province (according to the list of hazardous wastes specified in Circular 36/2015/TT-BTNMT), which focus mainly on types of wastes such as electronic components; chemicals and organic solvents; synthetic oils; and sediment containing heavy metals, among others. In 2018, the amount of hazardous waste generated in the province was more than 138,300 tons, with Samsung Electronics Vietnam Thai Nguyen Co. alone generating nearly 124,000 tons.<sup>33</sup> This indicates that in 2018, Samsung's Thai Nguyen mobile phone factory generated 90% of all hazardous wastes in the province, despite the presence of many companies manufacturing products known to be highly polluting.

Samsung has also disregarded its commitments to the government to install waste handling capacity. According to Decision No. 447/QĐ-UBND dated March 10, 2022 of the Thai Nguyen Provincial People's Committee which approved the environmental impact assessment report of the Samsung Electro-Mechanics Project (Technology Improvement Project), Samsung promised to install the following types of environmental protection items:

- A 1,488 m<sup>2</sup> garbage warehouse
- Two additional wastewater treatment modules with a capacity of 14,000 m<sup>3</sup>/day for a total of 28,000 m<sup>3</sup>/day capacity

However, so far (approximately two years later), Samsung has not built a garbage warehouse. The company built only one wastewater treatment module (not two as promised) and the unit only has a capacity of 7,000 m<sup>3</sup>/day. The company committed to adding wastewater treatment modules with a total capacity of 28,000 m<sup>3</sup>/day, but only installed 25% of the promised capacity.<sup>34</sup>



Designated and general wastes are not separated in the surface-mounted devices process at Samsung's Bac Ninh plant.



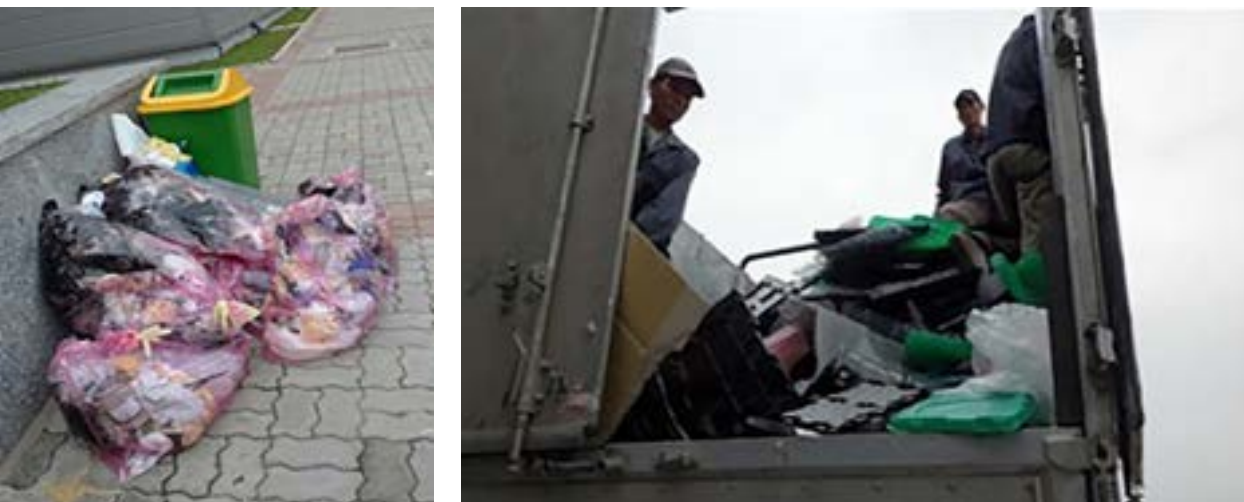
Designated wastes contaminated with chemicals (left) and organic solvents (right) are left uncovered, causing odors in Samsung's Bac Ninh plant.

## INADEQUATE OUTDOOR WASTE STORAGE RESULTS IN MORE POLLUTION

Designated wastes must be stored in a specific storage area that has a roof and leakage prevention facilities to prevent the waste from being exposed to rain. It must be stored separately from general waste. However, at Samsung's Bac Ninh factory, these company standards were often not followed, resulting in pollution.



Designated waste and general waste are stored without separation at Samsung's Bac Ninh factory.



General and designated waste from the paint process is discharged on the sidewalk outside the Bac Ninh factory without separation (left). Designated and general wastes are discharged without separation at the Bac Ninh factory (right).

## SAMSUNG'S SUSTAINABILITY REPORTS COVER UP SIGNIFICANT POLLUTION PROBLEMS AT ITS FACTORIES IN VIETNAM

After the company detailed extensive pollution and poor environmental management at its Bac Ninh factory in Vietnam, the 2013 Samsung Electronics Sustainability Report which reports on activities in 2012, ironically noted that the company has a *“commitment to sustainable development and social responsibility through eco-driven business and management activities.”*<sup>35</sup> The rest of the report does not mention environmental pollution in Vietnam, but claims that due to company efforts, *“harmful effects are minimized and environmental incidents are prevented at the source”* and that, *“it has successfully met all the relevant legal requirements by developing a pollutant and chemical management system, with no violations recorded in 2012.”*<sup>36</sup>

The 2013 Sustainability Report section on air pollution management states that the company has been, *“installing optimal prevention facilities when increasing new production lines, and continuously performing efficiency enhancement activities at its prevention facilities.”*<sup>37</sup> However, it had already been confirmed in 2012 that the company built the Bac Ninh plant with inadequate, incorrectly-sized air pollution control facilities and then failed to resolve that problem and instead operated it in violation of Samsung's own regulations by removing filters and activated carbon, resulting in the discharge of polluted air. The company's investigation by the EHS group from Samsung's mobile phone factory in Gumi, South Korea, and the Global EHS Center from company headquarters, showed that the factory failed to comply with the activated carbon replacement cycle in the air pollution control facility — a violation of company policy.

The 2013 Sustainability Report claims that, *“Samsung Electronics discharges all wastewater generated by its workplaces after processing it at internal processing facilities.”*<sup>38</sup> In addition, the report states that, *“The company's internal standard, which is more stringent than the national legal standard, is applied to discharge water, and discharge water is monitored.”*<sup>39</sup> However, the company's investigation showed that the Bac Ninh factory did not even have a production wastewater treatment facility for at least three years of operation and just dumped toxic wastewater directly into the environment. As noted by the Samsung whistleblower, at Samsung Vietnam, *“the factory's wastewater was discharged directly through rainwater pipes to the river nearby.”*<sup>40</sup> A former worker at the Bac Ninh plant in charge of cleaning tanks holding toxic chemicals noted that *“the company subcontracted to do the disposal would dump the materials into a nearby river.”*<sup>41</sup>

The 2013 Sustainability Report claims that the company, *“prevents soil pollution by chemicals at the source, by separately storing chemicals used in the production process at non-transmission processed storage facilities”* and that chemicals used at its factories, *“are strictly monitored in their method of use and place of use.”*<sup>42</sup> However, Samsung investigations showed that there were many cases of hazardous substances leaking from chemical and waste storage areas at its factories in Vietnam, contaminating nearby soil and water.

In 2022, Samsung's Sustainability Report reviewed activities in 2021 and claimed that all chemicals *“are stringently controlled”* and that, *“Once the purchased chemicals are delivered to each site, the inventory is thoroughly monitored until they are safely discarded through a separate process.”*<sup>43</sup> The Report also claims that, *“all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems.”* In contrast, Samsung's Ho Chi Minh Plant EHS Group investigation in 2021 documented violations with company policies at its appliance factory in Ho Chi Minh City. These included discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment; and chemicals leaking inside the factory, posing a danger to workers.

In addition to not reporting the pollution occurring at Samsung facilities in Vietnam, the 2022 Sustainability Report failed to mention that Samsung Semiconductor in Texas, USA, spilled approximately 250,000 liters of toxic wastewater into a river tributary.<sup>44</sup>

The 2023 Sustainability Report does not mention that in 2022, Samsung Semiconductor in Texas released nearly 3 million liters of toxic wastewater into a river tributary and the spill went on for more than three months, killing all aquatic life.<sup>45 46 47</sup> The release of toxic wastewater in Texas is not included as an example of violations of environment-related laws in the 2023 Sustainability Report. Instead, the report states that, *“the Texas Commission on Environmental Quality (TCEQ) issued a Notice of Corrective Action regarding the wastewater spill at the Samsung Austin Semiconductor LLC. (SAS) of the subsidiary of Samsung Electronics’*

*DS Division, and no financial sanctions such as fines were imposed as of the reporting date.*<sup>48</sup> No reader would guess the reality of the company's mismanagement from that sentence.

The company's sustainability report should discuss EHS challenges and evaluate the company's efforts at increasing its sustainability. However, the Samsung whistleblower noted that there is no reporting of EHS violations in the sustainability reports. *"The report itself is completely false... they should have recorded the truth,"* he said.<sup>49</sup>

## SAMSUNG PUBLICLY REPORTS POLLUTION IN SOUTH KOREA, BUT NOT IN VIETNAM

The foul smells emanating from Samsung's factories in Vietnam made its air pollution obvious to community residents, but the dumping of toxic wastewater directly to the environment and unsound management of wastes were less visible. However, none of the company's chemical releases were visible to regulators because at that time there was no regulatory obligation for Samsung to report them to the Vietnamese government.

While Samsung released noxious air pollutants and dumped toxic wastewater in Vietnam, the company reported factory emissions under pollutant release and transfer registry (PRTR) regulations in South Korea and other locations where the company operates. At its factories in South Korea, Samsung Electronics is required to report emissions and transfers of more than 400 substances to air, land, water, and wastes through the country's PRTR system, which makes the data publicly available.<sup>50</sup> However, the company simply refused to do in Vietnam what it has been required to do at home. Instead, the company took advantage of the fact that Vietnam did not have a PRTR system at the time and hid its dumping from regulators and the public.

## INFORMATION ABOUT EMISSIONS IN VIETNAM

In Vietnam, a draft plan for a PRTR system was released in 2017.<sup>51 52</sup> Subsequently in 2020, PRTR elements were integrated into the Law on Environmental Protection.<sup>53</sup> Further modifications are described in Government Decree 08/2022/ND-CP which was issued in 2022.<sup>54</sup>

As a local government's initiative, the Department of Natural Resources and Environment of Binh Duong province worked with a company to develop a pilot PRTR software. The province includes manufacturing from foreign investors such as Adidas, H&M, McDonalds, and Nike. However, there is no current information on the implementation of the software. Notably, this initiative was part of the Ministry of Natural Resources and Environment (MoNRE) project titled *"Safe management of persistent organic pollutants (POPs) and hazardous chemicals"* with funding from the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP) between 2015 and 2020. One training for businesses from nine industries was conducted in 2019 including companies doing recycling; waste treatment; concentrated industrial wastewater treatment; textile dyeing; manufacture of pulp and paper; chemical production; pesticide production; processing wood and wood products; production of rubber; and manufacture of metal products.<sup>56</sup>

The government reporting form for wastewater treatment emissions includes a list of 18 chemicals plus total organic compounds for input wastewater and a list of 22 chemicals for reporting in post-treatment of wastewater.<sup>57</sup> The reporting form for incinerators includes requirements for reporting dioxins / furans and mercury.<sup>58</sup> In contrast, Samsung must report emissions of more than 400 chemicals to air, land, water, and wastes in South Korea.<sup>59</sup>

Article 47 of Government Decree 40/2019 stipulates that production facilities that have a total discharge of 5,000 m<sup>3</sup> of exhaust gas/hour or more into the environment must carry out periodic emission monitoring with a frequency of once every 3 months. The release quantity must consider the total design capacity of exhaust gas treatment systems and equipment or according to the approved exhaust gas flow in the environmental impact assessment report and equivalent documents. Environmental parameters to be monitored include flow, temperature, pressure, residual oxygen (O<sub>2</sub>), total dust, sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO).<sup>60</sup> All facilities with such emissions must develop a plan to carry out annual environmental monitoring, and must submit this plan to the Department of Natural Resources and Environment before December 31st of the previous year for monitoring and supervision. There are also requirements for information dissemination. The Department of Natural Resources and Environment must publicize the list of production facilities performing environmental monitoring on their website. However, the authors could not find a list of these

facilities on the Ministry's website. Therefore, it is not clear whether Samsung and its suppliers complied with this monitoring requirement.

Note that according to the Air Pollution Control Facility Evaluation Report prepared in April 2012, the Bac Ninh plant was identified as a site with large emissions that should be monitored. The company monitored eighteen types of parameters including flow rate, total dust, sulfur dioxide, nitrogen oxides, and carbon monoxide. The results showed that all measurements were well below the standard. These results contrasted sharply with the severity of the air pollution problem at the Bac Ninh plant. The contradiction between the reality of the air pollution and the measurement results suggests that the company was not effectively monitoring its actual air pollution. This is another indication that the company culture of secrecy and hiding problems is not only external, but also deeply rooted within Samsung.

Annex 1, Part 2 of Government Decree 08/2022/ND-CP contains a list of industries that could cause environmental pollution. The list has three levels of severity and despite the high chemical intensity of the electronics industry, the last entry of the lowest level of pollution risk is “*Manufacture of components, electrical and electronic equipment.*”<sup>61</sup> The classification of these three levels of severity includes the following criteria: concentrated residential areas; water sources used for domestic water supply purposes; nature reserves according to the provisions of the law on biodiversity and fisheries; tangible cultural heritage, other natural heritage; land for wet rice cultivation with two or more crops; important wetlands; and requirements for migration, resettlement, and other sensitive environmental factors.<sup>62</sup>

## THE BENEFITS OF PRTR

In many countries, companies are required to publicly report releases of hazardous chemicals to the environment through PRTR systems. Around the world, PRTR systems play a crucial role in environmental governance by requiring polluters to be transparent and accountable toward end-of-pipe pollution discharge, safeguarding the public's environmental right to know, and enabling media and civil society to supervise and push for discharge reductions, thus becoming key measures for controlling toxic and hazardous chemicals.<sup>63</sup>

As noted by the UN Economic Commission for Europe, PRTR systems have significant benefits for governments:<sup>64</sup>

- review the compliance of local facilities with their permit conditions;
- track the release of hazardous chemical substances and pollution trends over time; examine progress in reducing emissions;
- monitor compliance and national progress with international commitments;
- set priorities for reducing or even eliminating the most potentially damaging releases;
- identify priority industrial sectors for eco-innovation;
- use PRTR results as one input for assessing risks to human health and the environment;
- help achieve pollution prevention, lessening the burden of control regulations, which requires a large bureaucracy to monitor and enforce; and
- reduce costs to Government and industry by providing a coordinated reporting system.

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## PHOTOGRAPHY

Page 25 credit: <https://newstapa.org/article/E-rbn>

Pages 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44 credit: Samsung whistleblower

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# CHAPTER 3. SAMSUNG OUTSOURCES HARM AND POORLY MANAGES ITS POLLUTING SUPPLY CHAIN

## KEY POINTS IN THIS CHAPTER

1. EHS departments of Samsung Electronics conduct assessments of suppliers in Vietnam to determine compliance with company standards, but the team only has a handful of inspectors and cannot cover the large number of suppliers.
2. Internal investigations by Samsung find extensive non-compliance issues in Samsung suppliers including air pollution, water pollution, and inadequate waste management. Over a four-year period, Samsung's Bac Ninh plant Environmental Health and Safety (EHS) team found more than 13,000 compliance violations at its suppliers' factories with hundreds of compliance violations each quarter based on standards designed by the electronics industry. If remedial action occurred, it was slow and insufficient because serious EHS issues in suppliers did not affect their ability to do business with Samsung.
3. To deal with severe air pollution issues, Samsung's Bac Ninh plant outsourced its most hazardous processes in 2017 and 2018 to its suppliers. SIT Vina provides one example of the consequences of this decision. The factory discharges smoke and dust day and night, causing health impacts in community residents that are severe enough to result in hospitalization. A public health official has noted increases in the number of patients with cancers of the throat and lungs. Instead of solving the air pollution issue at the Bac Ninh factory, Samsung increased the problem while providing the company with an excuse to ignore it since the pollution and its consequences occur in the supplier's community.
4. Samsung's supplier management system also includes self-evaluation by suppliers. The company notes that good scores prioritize the supplier for increased business. This process invites cheating and makes it easy for suppliers to conceal prohibited practices.
5. In some cases, Samsung contracts third-party audits of suppliers which show high scores for compliance. These types of audits have been widely criticized for not finding problems and the high scores do not reflect the extensive non-compliance issues in suppliers found by the company's own investigations.
6. According to Samsung, if suppliers and sub-suppliers do not comply with the Supplier Code of Conduct, contracts can be suspended or terminated. However, in practice even if a supplier has serious non-compliance with EHS standards, Samsung management ignores it and continues the business relationship.
7. According to the company, the Samsung Electronics Supplier Code of Conduct is based on the Responsible Business Alliance (RBA) Code of Conduct. However, Samsung has significantly weakened the RBA Code by editing it to reduce workers' rights and safety and grant the company more authority.

## INTRODUCTION

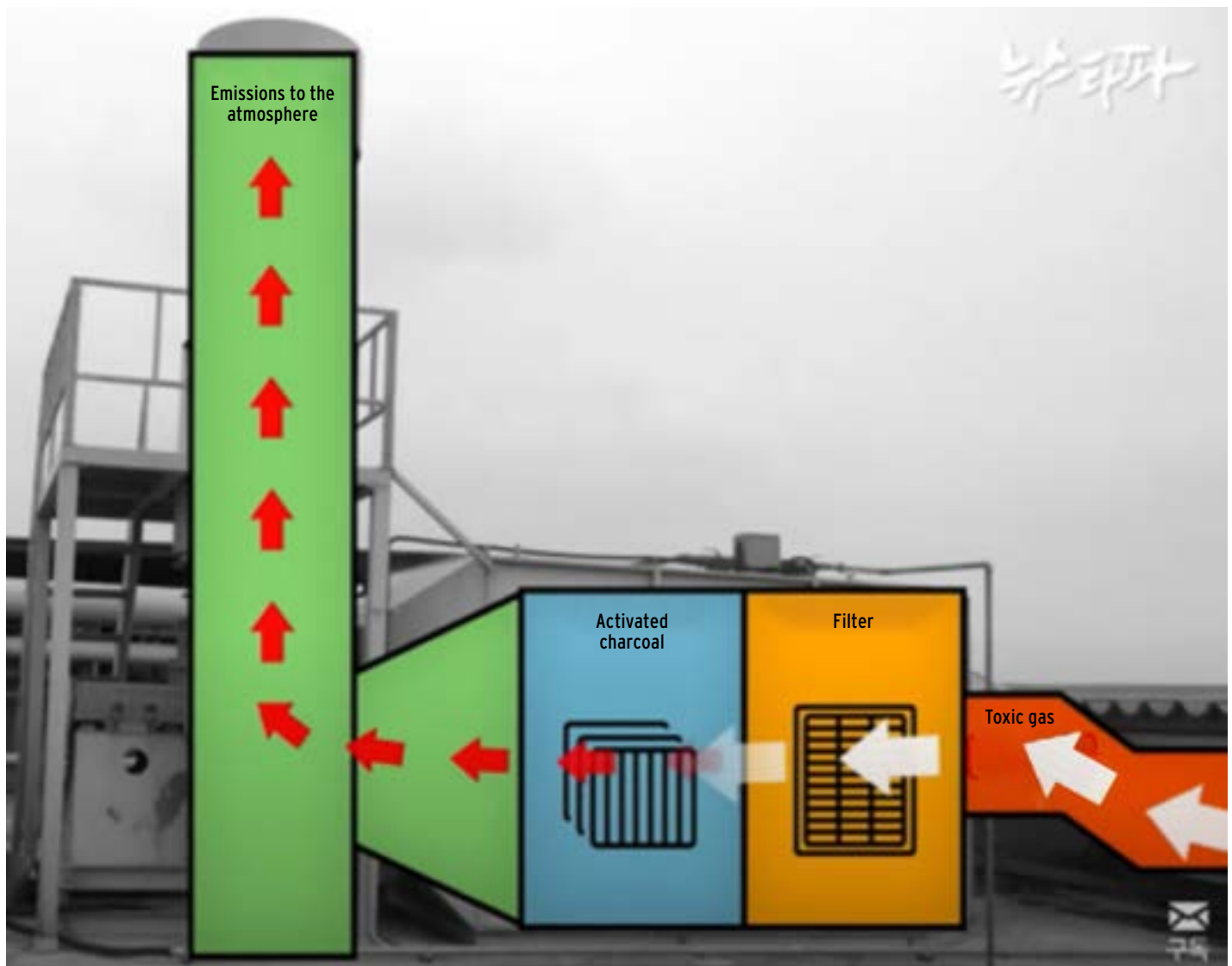
Smartphones contain approximately 1500 parts used to make components including circuit boards, antenna, liquid crystal display (LCD), microphone, speaker, battery, case, and camera, among others.<sup>1</sup> These numerous parts are manufactured and imported by more than 100 suppliers in Vietnam. Some of these suppliers can be as large as Samsung factories but they generally have less capacity and awareness of EHS issues.<sup>2</sup> EHS experts at Samsung Electronics assess suppliers in Vietnam for compliance with company standards. Internal investigations find extensive non-compliance issues in Samsung suppliers including air pollution, water pollution, and inadequate waste management.<sup>3</sup> The case of Samsung supplier, SIT Vina, illustrates that outsourcing of toxic processes from Samsung's Bac Ninh factory has made environmental pollution more widespread and serious (see below).<sup>4</sup>

Analysis for this report used documents from Samsung's Bac Ninh EHS team provided by the Samsung whistleblower to document compliance violations at some of Samsung's suppliers from 2016 – 2019. Categories used by the EHS team included fire, electric / utility, safety, environment, and health. Samsung's internal investigations found more than 13,000 compliance violations at its suppliers' factories in Vietnam over a four-year period, even though not all suppliers were investigated. Each quarter, Samsung's Bac Ninh EHS team documented hundreds of violations at the company's suppliers based on standards designed by the

electronics industry from Samsung or third-party organizations such as the Electronic Industry Citizenship Coalition or the Responsible Business Alliance. Note that there was very little EHS survey data for Samsung's Ho Chi Minh factory due to the small size of the EHS team. This chapter will provide examples of Samsung Electronics' investigations that show how their suppliers have polluted Vietnam's environment.

## ELEMENTS OF AIR POLLUTION CONTROL FACILITIES

Chemical odors are often found near factories and in industrial parks where supplier factories are clustered because chemicals are being released into the air due to inadequate operation of air pollution control facilities. Samsung Vietnam factories and suppliers primarily operate air pollution control facilities that use activated carbon, various types of filters, and scrubbers. Scrubbers are often used in processes involving large amounts of hazardous chemicals, such as painting and plating. Regular maintenance includes replacing or cleaning this equipment at appropriate intervals. One fundamental aspect of designing air pollution control facilities is that they must have sufficient capacity to purify the quantity of polluted air generated during factory operations.



Graphic showing the undersized air pollution control facility at Samsung Electronics' Bac Ninh Plant.

## INADEQUATE AIR POLLUTION CONTROL

According to Samsung, the company subscribes to the standards of the Responsible Business Alliance (RBA) which specify five categories of air pollution control facilities based on the amount of pollutant emissions. However, Samsung Electronics has never verified that its Vietnamese suppliers meet RBA standards by having sufficient air pollution control facilities to treat the quantity of their emissions. In fact, unhealthy levels of PM2.5 and PM10 and bad odors routinely emerge from many suppliers indicating that there are air pollution problems with operations. This may be due to improper management or incorrect design of air pollution control facilities, both of which occurred in Samsung's Bac Ninh factory.



Newstapa reporter measurement of fine dust levels outside of Samsung Electronics suppliers in Vietnam shows unhealthy levels of PM2.5 and PM10. The Korean phrase says, "Fine dust, very harmful."

## POOR MANAGEMENT OF AIR POLLUTION CONTROL FACILITIES

Samsung's Bac Ninh EHS team documented poor maintenance of air pollution control facilities in the company's suppliers including failure to periodically replace the activated carbon. For example, the photo on the right shows severe contamination around the air pollution control facility because activated carbon has not been replaced sufficiently frequently.

To ensure that the activated carbon and filters used in air pollution control facilities are in good condition, production must be temporarily stopped to permit inspection. However, the Samsung Bac Ninh EHS inspection team is unable to stop production at supplier factories to permit inspection. In addition, the lifespan of activated carbon is about one month, but suppliers usually replace it every six months. Both practices indicate poor air pollution control management and as a result, odors are always emitted from supplier factories, indicating chemical releases. Although the Samsung Bac Ninh EHS inspection team has a volatile organic compound (VOC) meter, it is almost impossible for them to measure VOCs released by air pollution control facilities in suppliers due to the heights of the exhaust outlets. This reflects a problem in factory design which ignored the need to regularly monitor air pollutants. The air pollution problems at Samsung suppliers represent a blind spot by managers at supplier factories and Samsung Electronics. Poor management has resulted in ongoing air pollution of Vietnam's environment.



Activated carbon tower at a Samsung Electronics supplier shows failure to periodically replace activated carbon.

## EXAMPLE OF AIR POLLUTION AT A SAMSUNG SUPPLIER

The Vietnamese news media occasionally reports on pollution released by suppliers without naming Samsung. For example, in 2022, a news report described loud noise and “*unprocessed smoke*” emerging from SIT Vina, a South Korean company and Samsung supplier in Bac Ninh province. The company manufactures electronic components, metal molds for mobile phones and other devices, and conducts painting operations. SIT Vina “*discharges smoke day and night*” from the company’s eight chimneys and “*white dust flies thickly, covering the road surface like snow and rain.*”<sup>5</sup> Residents noted harsh burning smells resulting in headaches, breathing difficulties, and chest pain. A nearby business owner reported, “*Currently here, many people of all ages from the elderly to children are suffering from respiratory diseases, coughs, and pneumonia... Many people have had to be hospitalized for treatment, and when they feel better, they return home. Then after a while they get sick again by the factory’s pollution.*” A public health official noted that, “*people in the area have often suffered from respiratory diseases, especially the number of people with cancer next year is higher than that of the previous year, mainly lung cancer, throat cancer, and respiratory tract. Through monitoring people’s health conditions, during this time, inflammation of the throat, rhinitis, allergies, chest irritation, and difficulty in breathing are increasing in the ward.*”<sup>6</sup> The harms resulting from serious pollution released by SIT Vina demonstrate the consequences of outsourcing highly polluting operations from Samsung to its suppliers. Instead of solving the air pollution issue at the Bac Ninh factory, Samsung increased the problem while providing the company with an excuse to ignore it since the pollution and its consequences occur in the supplier’s community.



Dust released by SIT Vina, a Samsung supplier in Bac Ninh Province, contaminates the surrounding community, indicating lack of air pollution control.

## STANDARDS FOR WASTEWATER TREATMENT

According to RBA standards used by Samsung, a wastewater treatment facility license must be obtained before a plant begins operation. The RBA standards also specify that the wastewater treatment facility must have sufficient capacity to treat chemicals in wastes and be managed to ensure proper operation. The discharge of chemical wastewater and domestic sewage without proper treatment is prohibited. Wastewater must be measured in accordance with the specified parameters and measurement frequency, and must be managed so as not to exceed the standards for each parameter. If there is a risk of chemical leakage to the outdoors, leakage prevention berms should be installed to prevent the spread of pollutants because if chemicals leak outdoors, they can flow into rivers through stormwater pipes and pollute the environment.

The problem of wastewater discharge by Samsung’s suppliers in Vietnam is very serious. Since the third quarter of 2017, when Samsung’s Bac Ninh factory adopted the RBA standard as the EHS inspection tool for its suppliers, many problems related to discharge of pollutants in wastewater have been consistently found by Samsung’s Bac Ninh EHS team.<sup>7</sup> This includes many priority-level non-conformance situations that are very serious according to the RBA standards used by Samsung.

## DISCHARGE OF UNTREATED WASTEWATER TO THE ENVIRONMENT

The RBA standard specifies five categories of wastewater treatment facilities according to the amount of wastewater discharged, but Samsung has never properly verified that its Vietnamese suppliers have adequate treatment facilities for their wastewater before discharge. Despite the basic requirements outlined in the RBA standards, Samsung has frequently found its supplier factories in Vietnam to be discharging untreated wastewater directly into storm drains that lead to rivers. In addition, there are many cases where chemical-containing wastewater leaks from outdoor facilities, or wastewater generated indoors leaks outdoors. The photos below show examples of chemical-containing wastewater released directly to Vietnam's environment at a variety of Samsung suppliers.



Waste oil and toxic wastewater outlet at a Samsung Electronics supplier goes directly to an outdoor storm drain leading to waterways.



Chemical wastewater from CNC machining at a Samsung Electronics supplier is discharged outside without treatment.



Unattended manholes at a Samsung Electronics supplier are contaminated by spills of pollutants.



Untreated chemical-containing wastewater at a Samsung Electronics Supplier is being discharged directly to the outdoors.



Chemical wastewater containers at a Samsung Electronics supplier are placed next to storm drains and continuously dumped into them.



Water in storm drains at a Samsung Electronics supplier is contaminated due to leaking pollutants.

## DISCHARGE OF RAW SEWAGE TO THE ENVIRONMENT

In addition to chemical wastewater from production processes, domestic wastewater from cafeterias and restrooms must also be properly treated before release. However, many suppliers discharge raw sewage into storm drains without proper treatment. The photos below show examples of direct discharge of raw sewage into the environment at Samsung suppliers as documented by the Samsung Bac Ninh EHS team.



A large amount of sewage is discharged into a stormwater manhole at a Samsung Electronics supplier.



Discharging untreated kitchen wastewater at a Samsung Electronics supplier.

## OIL AND CHEMICAL LEAKS INTO THE ENVIRONMENT

Facilities to prevent the spread of chemicals, such as outflow guards, are required where chemicals or designated wastes are stored and where there is a risk of chemical leakage from facilities. However, many suppliers do not have these facilities. There have been many cases where designated waste storage and oil storage did not have catchment facilities such as trenches or guards, so it was not possible to prevent the spread of leaks. In many cases, storage areas are exposed without roofs. Oil-containing wastewater has often leaked from generators and air compressors, without facilities to prevent the spread of wastewater. The photos below show examples of oil and chemical leaks into the environment due to the lack of prevention systems in Samsung's suppliers as documented by Samsung's Bac Ninh EHS team.



Wastewater from waste storage leaks outdoors at a Samsung Electronics supplier due to the lack of wastewater facilities such as outflow guards.



No outflow guard is installed in the oil storage at a Samsung Electronics supplier, causing leakage to spread into the environment.



No trench or outflow guard is present to prevent leakage of hazardous substances, allowing pollutants to spread outdoors at a Samsung Electronics supplier.



Large amounts of flammable organic solvents are used at a Samsung Electronics supplier, but there is no spill containment and no labeling.

## INADEQUATE OUTDOOR WASTE STORAGE

Designated wastes can contaminate the environment and are therefore often subject to special rules regarding handling and disposal. To prevent environmental pollution, a separate storage area must be installed for designated wastes. When storing wastes outdoors, designated and non-designated wastes must be kept separate, and designated wastes must be protected from leakage. However, there are many Samsung suppliers in Vietnam who improperly manage outdoor storage of wastes. The photos below show examples of improper storage of wastes outdoors at Samsung's suppliers as documented by the company's Bac Ninh EHS team.



Wastewater treatment facility sludge stored outdoors is leaking.



Leachate spills outside due to outdoor storage of designated and hazardous wastes at Samsung Electronics suppliers.



Contaminants leaking out of a hazardous waste storage facility at a Samsung Electronics supplier.



Chemicals are leaking into the environment from unattended barrels at these Samsung Electronics suppliers. Waste chemicals are being discharged into a nearby storm drain because the designated waste storage area is not equipped with spill prevention facilities and a roof.



Storing designated wastes in outdoor areas without facilities and roofs to prevent environmental contamination at a Samsung Electronics supplier.



Storing and disposing of designated waste without separating it from general waste at Samsung Electronics suppliers.

## HOW SAMSUNG ELECTRONICS MANAGES ITS SUPPLIERS

Samsung Electronics' Supplier Code of Conduct is a key element of the company's supply chain management system and suppliers are required to comply with it.<sup>8</sup> In addition, the company requires that suppliers ensure that *"all of their direct or indirect sub-suppliers related to assembly, components, raw materials and packaging comply with the Code."*<sup>9</sup> According to Samsung, lack of compliance with the Code can result in suspension or termination of a contract with a supplier. Actual practice is quite different.

Samsung notes that its Supplier Code of Conduct is based on the Responsible Business Alliance (RBA) Code of Conduct.<sup>10 11</sup> However, there are some significant differences between the two Codes that negatively impact workers' rights and weaken EHS and occupational health and safety measures (please see the section below). Samsung Electronics is a Regular Member of RBA, below Full Member status.<sup>12</sup> To be a Full Member, Samsung would have to verify all requirements and publish corporate responsibility data.

Samsung Electronics' Sustainability Reports describe several ways in which the company manages its suppliers: on-site audits, self-assessment, and third-party audits.<sup>13</sup>

## ON-SITE AUDITS OF SAMSUNG SUPPLIERS

The results of on-site audits by the Samsung Vietnam Bac Ninh EHS team described above reveal a wide variety of serious problems including incorrect design of air pollution control facilities, poor management of air pollution control techniques, direct release of toxic wastewater to the environment, illegal discharge of raw sewage into the environment, and polluting waste management practices, among others. In interviews with the Samsung whistleblower, Newstapa noted that, *"Sometimes improvements are made after inspectors from Samsung visit them. However, this is not enough because only a handful of inspectors cover too many subcontractors."*<sup>14</sup>

Samsung audits suppliers using an assessment tool based on RBA criteria. Samsung's assessment tool is not publicly available, but the authors obtained it from the Samsung whistleblower. The assessment tool includes EHS areas such as occupational safety, occupational accidents and illnesses, industrial hygiene, emergency preparedness, environmental permitting and reporting, pollution prevention and resource conservation, hazardous substances, wastewater and solid waste, air emissions, energy consumption, and greenhouse gas emissions, among others. Other areas include non-discrimination, freedom of association, company compliance, training, worker feedback/engagement, and corrective action process, among others.

A key issue is how Samsung management responds when a supplier does not comply with company EHS standards as revealed by its own investigations. The answer is usually there is no response from management to EHS non-compliance in suppliers and the business relationship continues, even in cases that are egregious.

For example, at one supplier company, a dust collection duct exploded injuring 34 workers.<sup>15</sup> Poor management of basic safety issues caused the explosion. In addition, the supplier received poor or failing marks in evaluations of its EHS practices over a period of two years. The photo below shows poor or failing evaluations of this company including safety evaluations of its expansion, its CNC process, and even its ability to improve after being cited by Samsung's Bac Ninh EHS team as poor in environmental safety. Despite repeated poor or failing evaluations, management at Samsung Electronics disregarded the findings of its own Bac Ninh EHS team and continued doing business with this supplier as if nothing was wrong.



Fire at Samsung's Vietnamese supplier, Company S

January 9, 2023

A dust collection duct explodes at a Samsung Electronics supplier in Vietnam injuring 34 workers. Poor management of basic safety issues caused the explosion.

The whistleblower told Newstapa reporters that ignoring violations revealed by Samsung EHS investigations is part of Samsung's normal management style. *"There is no barrier to their partnership. That is why no improvements are made quickly... The procurement department continues the business and the lack of sanctions leads to the postponement of improvements in environmental safety."*<sup>16</sup> Newstapa noted that, *"The management system of its subcontractors without sanction mechanisms becomes nominal with no real benefit."* In an interview with Newstapa, Hee-cheon Choi, former Director General of Damage Support at the Special Commission on Social Disasters, noted that, *"Samsung's pre-impact assessment becomes just ceremonial paperwork."*<sup>17</sup>

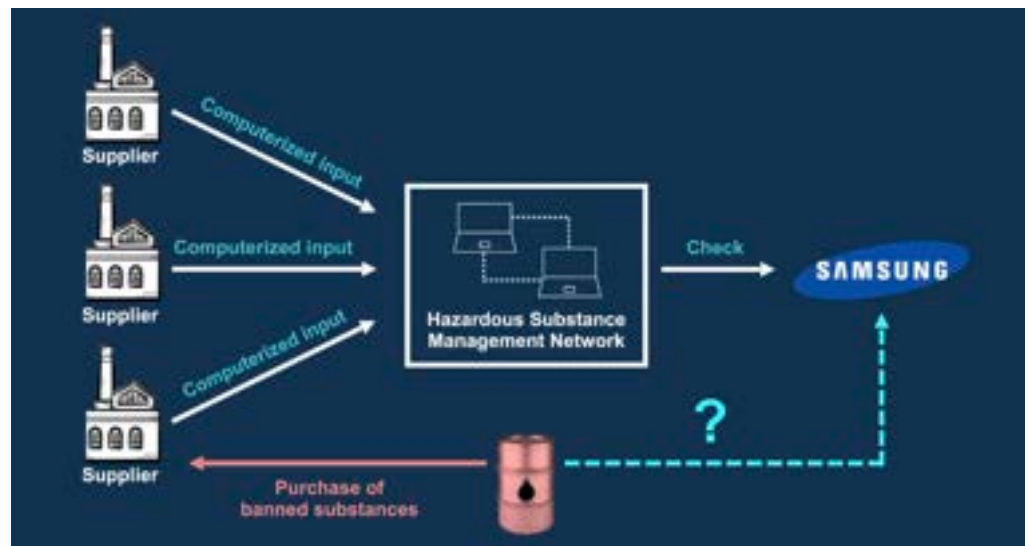
2017 2 <sup>nd</sup> quarter	Environmental safety	Poor
2017 4 <sup>th</sup> quarter	Improvement	Poor
2018 3 <sup>rd</sup> quarter	Pre-safety evaluation of factory expansion	Fail
2019 1 <sup>st</sup> quarter	Pre-safety evaluation of CNC process	Fail
2019 2 <sup>nd</sup> quarter	Pre-safety evaluation of factory expansion	Fail

Samsung identified this supplier as poor or failing in environmental safety in 2017, 2018, and 2019 but continued its business arrangement regardless of its poor record.

## SELF-ASSESSMENT OF SAMSUNG SUPPLIERS

Samsung Electronics asks its suppliers in Vietnam and elsewhere to evaluate themselves using the assessment tool described above. The consequences of a good self-evaluation are quite clear. Samsung notes that good scores on evaluations mean that supplier companies, *"are given priority in supply volume allocation for the following year."*<sup>18</sup> The reliance on self-evaluation invites answers that are not true. Samsung has further increased the motivation to cheat by offering even more business contracts to suppliers that have good self-evaluation scores. Newstapa called this reliance on self-assessment, *"a self-contradiction"* and noted that if suppliers want to conceal a practice that is not permitted, such as use of banned chemicals, they can easily do so.<sup>19</sup> This is because Samsung manages hazardous substances at its suppliers by relying on them to input their hazardous substance use online. A supplier that wants to conceal its use of certain substances can easily do so.

Schematic showing how Samsung relies on its suppliers to input their hazardous substance use in online reporting. The self-reporting process provides opportunities for suppliers to conceal hazardous substance use.



## THIRD-PARTY AUDITS OF SAMSUNG SUPPLIERS

In some cases, Samsung contracts third-party audits of suppliers using the RBA criteria. The results of these audits in Samsung's 2022 and 2023 Sustainability Reports show high scores for compliance with company policies on labor/human rights, safety/health, environment, ethics, and management system.<sup>20 21</sup> For example, in 2022, the lowest score on these five items was 96%. The audit reports are not publicly available and no information was provided about who performed the audits or their criteria. Note that the wide variety of non-compliance issues identified by the company's own investigations are not reflected in the scores provided by these audits. As a result, Samsung's Sustainability Reports present a high-scoring positive evaluation of suppliers from third-party audits while hiding the realities revealed by the company's own internal investigations.

Third party audits are widely used by companies to assess supply chain operations but they often contain conflicts of interest, deception, lack of transparency and other problems that undermine their results. According to the whistleblower, *"The third-party verification organizations' lack of verification capabilities to properly identify problems in the field was also a problem."*<sup>22</sup> As noted by Human Rights Watch, *"Some brands that pay for auditors and appoint them may ask them to be lenient during an audit because they want to place orders or continue doing business with the supplier being audited."*<sup>23</sup> Hiding adverse findings is also a common practice and *"efforts to deceive auditing firms include coaching workers, keeping double-books and fake records, and 'hiding' children who are employed illegally. Pre-announced social audits increase the risk of such tactics."*<sup>24</sup>

Ironically, some of the most critical voices about the usefulness of third party audits come from auditors who conduct the audits. Here are three examples:

Andrew A.: *"You have to ignore a whole bunch of things you can sense is a problem...They [the auditing industry] get all obsessed with their audit tools and their reports and they miss the goal which is to uncover the abuses."*<sup>25</sup>

Aroon: *"The role of the auditor is very limited. We can only go to the factory and it's like firefighting. Majority of the brands are only interested in seeing the results of the audits and are not doing the kind of root cause analysis that understand how brand practices cause problems.... Majority of them try to push the costs to the factory—directly or indirectly.... And then the brand leaves the factory and there's no money to maintain the [compliance] system."*<sup>26</sup>

Than T.: *"I was told to leave all the big findings because they [supervisor in the auditing firm] said, 'It's our customer. You cannot hurt the relationship between us and our customer. Just tell the factory informally and they can fix it.'"*<sup>27</sup>

A more effective way to address compliance issues in suppliers is through worker-driven social responsibility which is based on the premise *"that labor rights protections must be worker-driven, enforcement-focused, and based on legally binding commitments that assign responsibility for improving working conditions to the global corporations at the top of supply chains."*<sup>28</sup> Some key characteristics that distinguish worker-driven social responsibility from the typical corporate social responsibility initiatives are:

- 1) worker organizations drive monitoring and enforcement;
- 2) brands and retailers must sign a legally binding agreement with worker organizations requiring financial support to suppliers to meet labor standards set by workers and to stop doing business with suppliers who violate these standards; and
- 3) workers gain education on their rights; rigorous workplace inspections are conducted; public disclosure reveals brand and supplier names and locations; and a complaint mechanism provides effective action when abuses are identified by workers.<sup>29</sup>

## DIFFERENCES BETWEEN THE SAMSUNG AND RBA CODES OF CONDUCT

According to the company, the Samsung Electronics Supplier Code of Conduct<sup>30</sup> is based on the Responsible Business Alliance (RBA) Code of Conduct.<sup>31</sup> However, there are some significant differences between the two Codes that make the Samsung Electronics Code significantly weaker than the RBA Code as outlined below.

## THE SAMSUNG ELECTRONICS SUPPLIER CODE OF CONDUCT DELETES MANY IMPORTANT ITEMS IN THE RBA CODE OF CONDUCT

Some parts of the RBA Code are missing in the Samsung Electronics Supplier Code of Conduct.<sup>30</sup> As a result, the Samsung Code is substantially weaker than the RBA Code. The deletions tend to reduce workers' rights and safety and grant the company more authority. For example, these points are present in the RBA Code but deleted in the Samsung Code:

- There shall be no unreasonable restrictions on workers' freedom of movement in the facility in addition to unreasonable restrictions on entering or exiting company provided facilities including, if applicable, workers' dormitories or living quarters.
- As part of the hiring process, all workers must be provided with a written employment agreement in their native language that contains a description of terms and conditions of employment.
- Foreign migrant workers must receive the employment agreement prior to the worker departing from his or her country of origin and there shall be no substitution or change(s) allowed in the employment agreement upon arrival in the receiving country unless these changes are made to meet local law and provide equal or better terms.
- All work must be voluntary, and workers shall be free to leave work at any time or terminate their employment without penalty if reasonable notice is given as per worker's contract.
- Studies of business practices clearly link worker strain to reduced productivity, increased turnover, and increased injury and illness.
- All overtime must be voluntary.
- Workers shall be provided with reasonable accommodation for religious practices.
- ... ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace.
- Emergency drills must be executed at least annually or as required by local law, whichever is more stringent.
- ... environmental responsibility is integral to producing world-class products.
- Participants shall identify the environmental impacts and minimize adverse effects on the community, environment, and natural resources within their manufacturing operations, while safeguarding the health and safety of the public.
- Workers must be given a safe environment to provide grievance and feedback without fear of reprisal or retaliation.

## THE SAMSUNG ELECTRONICS SUPPLIER CODE OF CONDUCT OFTEN WEAKENS THE RBA CODE OF CONDUCT BY CHANGING OR DELETING PARTS OF THE TEXT

In many cases, the Samsung Code substantially weakens the RBA Code using edits to change or delete text. In general, the Samsung edits downgrade attention to health and lessen workers' rights in favor of providing more authority to the company. Note that several of these parts of the Code are not weakened in the Korean version of the text. It is possible that the difference may be due to a translation error or that the company prefers a weaker English version for use with workers in countries outside of South Korea. These points in the English text illustrate how small changes in text can impact workers' rights and health and safety:

- Samsung: *"The Supplier shall control all of the environmental pollutants derived from its business activities, and use its best efforts to reduce its environmental impact when providing products and services to Samsung."*  
RBA: *"Participants shall **identify the environmental impacts and minimize adverse effects on the community, environment, and natural resources** within their manufacturing operations, **while safeguarding the health and safety of the public.**"*
- Samsung: *"Suppliers shall adhere to laws and regulations related to chemical and waste management, recycling, wastewater and air emissions."*  
RBA: *"...a business, in **all of its activities**, must operate in full compliance with the laws, rules, and regulations of the countries in which it operates."*

- Samsung: “Workers should be allowed at least one day off every seven days.”  
RBA: “Workers **shall** be allowed at least one day off every seven days.”
- Samsung: “There is to be no harsh and inhumane treatment including any sexual harassment, sexual abuse, corporal punishment, mental or physical coercion or verbal abuse of workers; nor is there to be the threat of any such treatment.”  
RBA: “There is to be no harsh or inhumane treatment including **violence, gender-based violence, sexual harassment, sexual abuse, corporal punishment, mental or physical coercion, bullying, public shaming, or verbal abuse of workers; nor is there to be the threat of any such treatment.**”
- Samsung: “Companies shall not engage in discrimination based on race, color, age, gender, sexual orientation, ethnicity, disability, pregnancy, religion, political affiliation, union membership or marital status in hiring and employment practices such as wages, promotions, rewards, and access to training.”  
RBA: “Companies shall not engage in discrimination **or harassment** based on race, color, age, gender, sexual orientation, **gender identity and expression, ethnicity or national origin, disability, pregnancy, religion, political affiliation, union membership, covered veteran status, protected genetic information or marital status in hiring and employment practices such as wages, promotions, rewards, and access to training.**”
- Samsung: “Potential or actual worker exposure to safety hazards (e.g. chemical, electrical and other energy sources, fire, vehicles, and fall hazards) are to be identified, assessed, and controlled through proper design, engineering and administrative controls, preventative maintenance and safe work procedures (including lock out/tag out), and ongoing safety training.”  
RBA: “Worker potential for exposure to **health** and safety hazards (chemical, electrical and other energy sources, fire, vehicles, and fall hazards, etc.) are to be identified and assessed, mitigated **using the Hierarchy of Controls, which includes eliminating the hazard, substituting processes or materials,** controlling through proper design, implementing engineering and administrative controls, preventative maintenance and safe work procedures (including lockout/tagout), and providing ongoing occupational health and safety training.”
- Samsung: “Potential emergency situations and events are to be identified and assessed, and their impact minimized by implementing emergency plans and response procedures including: emergency reporting, employee notification and evacuation procedures, worker training and drills, appropriate fire detection and suppression equipment, clear and unobstructed egress adequate exit facilities and recovery plans.”  
RBA: “Potential emergency situations and events are to be identified and assessed, and their impact minimized by implementing emergency plans and response procedures including emergency reporting, employee notification and evacuation procedures, worker training, and drills. **Emergency drills must be executed at least annually or as required by local law, whichever is more stringent.** Emergency plans should also include appropriate fire detection and suppression equipment, clear and unobstructed egress, adequate exit facilities, **contact information for emergency responders,** and recovery plans.”
- Samsung: “Workers shall be encouraged to raise safety concerns.”  
RBA: “Workers shall be encouraged to raise **any health** and safety concerns without **retaliation.**”
- Samsung: “Energy consumption and all relevant Scopes 1 and 2 greenhouse gas emissions are to be tracked and documented, at the facility and/or corporate level. Suppliers are to look for **cost-effective** methods to improve energy efficiency and to minimize their energy consumption and greenhouse gas emissions.”  
RBA: “Participants are to establish a corporate-wide greenhouse gas reduction goal. Energy consumption and all relevant Scopes 1 and 2 greenhouse gas emissions are to be tracked, documented, and **publicly reported against the greenhouse gas reduction goal.** Participants are to look for methods to improve energy efficiency and to minimize their energy consumption and greenhouse gas emissions.”
- Samsung: “Programs that ensure the confidentiality and protection of supplier and employee whistleblower are to be maintained unless prohibited by law.”  
RBA: “Programs that ensure the confidentiality, **anonymity,** and protection of supplier and employee whistleblowers are to be maintained, unless prohibited by law.”

- Samsung: “...workers are to be provided with appropriate, well-maintained, personal protective equipment...”  
RBA: “...workers are to be provided with **and use** appropriate, well-maintained, personal protective equipment **free of charge.**”
- Samsung: “Chemicals and other materials posing a hazard to humans or the environment are to be identified, labelled and managed to ensure their safe handling, movement, storage, use, recycling or reuse and disposal.”  
RBA: “Chemicals, **waste**, and other materials posing a hazard to humans or the environment are to be identified, labeled, and managed to ensure their safe handling, movement, storage, use, recycling or reuse, and disposal.”
- Samsung: “Air emissions of volatile organic chemicals, aerosols, corrosives, particulates, ozone depleting chemicals and combustion by-products generated from operations are to be characterized, monitored, controlled and treated as required prior to discharge **according to local laws and regulations.**”  
RBA: “Air emissions of volatile organic chemicals, aerosols, corrosives, particulates, ozone depleting substances, and combustion byproducts generated from operations are to be characterized, **routinely monitored**, controlled, and treated as required prior to discharge.”
- Samsung: “The Supplier shall clearly identifies company representative[s] responsible for ensuring implementation of the management systems and associated programs.”  
RBA: “The Participant clearly identifies **senior executive** and company representative(s) responsible for ensuring implementation of the management systems and associated programs.”

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# CHAPTER 4. SAMSUNG OPERATIONS VS. STANDARDS AND HUMAN RIGHTS PRINCIPLES

## KEY POINTS IN THIS CHAPTER

1. Government regulators in Vietnam granted approvals to Samsung's Bac Ninh factory and apparently did not oversee the company afterwards even though the plant used an air pollution control facility with insufficient capacity and did not have any facilities to treat toxic production wastewater for years. These actions violate adults' and children's right to a clean, healthy, and sustainable environment; the UN Guiding Principles on Business and Human Rights; and the Framework Principles on human rights and the environment.
2. Samsung's Bac Ninh plant released untreated chemical-containing air pollution for approximately seven years. For three years of operation, the factory did not have a wastewater treatment facility to treat toxic chemical-containing production wastes and they were quietly illegally dumped into the environment. For years, raw sewage overflowed into the environment. These actions violate adults' and children's right to a clean, healthy, and sustainable environment; the UN Guiding Principles on Business and Human Rights; and the Framework Principles on human rights and the environment.
3. Samsung's investigations of suppliers have revealed severe air pollution; violations of wastewater standards; lack of wastewater treatment contracts with industrial parks resulting in discharge of paint wastewater and air compressor wastewater directly into storm drains; oil spills from chemical storage; failure to comply with environmental regulations concerning wastewater measurements; and operating without an environmental impact assessment. These actions violate adults' and children's right to a clean, healthy, and sustainable environment; the UN Guiding Principles on Business and Human Rights; and the Framework Principles on human rights and the environment.
4. According to Samsung, lack of compliance with the Supplier Code of Conduct can result in suspension or termination of a contract with a supplier. However, in practice even if a supplier has serious non-compliance with EHS standards, Samsung management ignores it and continues the business relationship. Samsung's management of hazardous and prohibited substances relies on data entered online by suppliers. This invites answers that are not true. These management practices violate the UN Guiding Principles on Business and Human Rights.
5. Samsung's Bac Ninh factory lacked local exhaust systems in multiple places to remove toxic chemical-containing air so workers were routinely exposed to fumes. Chemicals were often labeled in Japanese or English — not Vietnamese — so that workers did not know what substance they were using. Samsung's investigations of the Ho Chi Minh City factory showed widespread chemical leaks from production contaminating the factory floor and waste chemicals leaking out of containers, resulting in exposure to workers. In 2023, methanol poisoning affected 37 workers at a Samsung supplier. These actions violate the human right to a safe and healthy working environment, the right to information, and human rights principles to respect and protect workers from toxic occupational exposures .
6. Samsung's refusal to publicly report emissions data in Vietnam that it routinely reports in South Korea's pollutant release and transfer registry (PRTR) system negatively affects community residents and undermines government regulators. These actions violate the Framework Principles on human rights and the environment and the right to information.
7. Samsung's sustainability reports have claimed that, "...*environmental incidents are prevented at the source;*" that "*optimal prevention facilities*" deal with air pollution; and that production wastewater is only discharged "*after processing it at internal processing facilities.*" However, the company's own investigations of the Bac Ninh plant showed rampant air pollution, dangerous working conditions, and a factory that did not even have a wastewater treatment facility for production wastes. The sustainability reports have also mentioned positive findings of third-party audits of their suppliers in Vietnam but they did not include nearly 13,000 compliance violations at its suppliers as identified by the company's own internal investigations over a four-year period. These actions violate the UN Guiding Principles on Business and Human Rights and the right to information.

8. Independent trade unions are illegal in Vietnam. Samsung has actively lobbied against country ratification of ILO Convention 87 on freedom of association and right to organize, which the country has not yet ratified. This violates the Framework Principles on human rights and the environment.
9. In South Korea, Samsung has filed lawsuits to block the release of health and safety information about chemicals, claiming that it contains trade secrets. In 2019, the National Assembly amended the Industrial Technology Act to reflect Samsung's positions. The law requires public agencies to keep all information related to national core technology secret, including working environment measurement reports. The law does not contain any exemptions for disclosure of information involving threats to human health and the environment. This violates the right to information and Framework Principles on human rights and the environment.
10. South Korea's proposed law, the Corporate Human Rights and Environmental Protection Act, would require tangible actions on human rights and environmental due diligence in supply chains in Samsung and other companies with more than 500 full-time employees or more than 200 billion won in sales (~USD\$150 million). The law was proposed in 2023, but has not yet passed.
11. True industry leaders would approach both domestic and multinational operations by fulfilling human rights obligations and applying the most rigorous standards of worker and environmental protection worldwide in their factories and suppliers, even in countries that lack rigorous laws or domestically in suppliers with less environmental and occupational safety infrastructure.

## SAMSUNG'S BAC NINH PLANT VIOLATES EHS STANDARDS BUT STILL GETS A LICENSE

As noted in Chapter 2, Samsung's Bac Ninh plant did not have adequate air pollution control or wastewater treatment facilities for many years, and there were serious problems with waste management. As a result, Samsung's plants were major polluters and the company paid zero for environmental cleanup or harm while polluting Vietnam's air, land, and water.



### 3) Compliance

과태료 및 행정처분

- 해당사항 없음

인허가 취득

- 폐기물 배출 인허가 완료(2010.6월) : 지정폐기물 16종, 일반폐기물 7종

- 대기배출 : 총 36대 (2009.10월:9대, 2010.10월:16대, 2011.8월:11대)

Report on Environmental Safety/Utility Diagnosis Results of SEV corporations by Samsung Electronics Global EHS Center in August 2012. Environmental approvals and permissions were issued even though there were no facilities or inadequate facilities to prevent environmental pollution originating from the Bac Ninh plant. The part circled in red says, "Authorization obtained; Waste Discharge License completed (June 2010): 16 types of designated waste, 7 types of general waste; Air emissions: 36 units in total (October 2009: 9 units, October 2010: 16 units, August 2011: 11 units)."

Nevertheless, the company had no problem in obtaining environmental approval and permission from the Government of Vietnam to operate the plant. According to the Samsung Electronics Global EHS Center's report, "Environmental Safety/Utility Diagnosis Results of SEV Corporations," dated August 2012, discharge permits for 16 types of designated wastes and 7 types of general wastes were completed in June 2010, and permits for air emissions were completed for a total of 36 facilities from 2009 to 2011.<sup>1</sup>

The Vietnamese government granted this approval to Samsung despite the undersized capacity of the air pollution control facility and did not oversee the company afterwards while the company removed air filters and activated carbon so that toxic air emissions were directly released to the environment. In addition, the company operated the plant for three years without toxic wastewater treatment resulting in direct dumping to the environment along with unsound waste management that polluted both the inside and outside of the Bac Ninh plant. The whistleblower recalled that *“in all 14 years of Bac Ninh’s operation, he was not aware of those lapses ever being investigated by the Vietnamese government.”*<sup>2</sup>

Samsung’s strong influence in Vietnam may have played a role in the company’s ability to obtain licenses despite inadequate environmental management measures and to continue operating without facing any legal consequences despite its long history of environmental problems. As noted in a report from Harvard University prepared for the Government of Vietnam, *“With tens of billions of dollars invested into its operations and well over 100,000 Vietnamese employees, Samsung wields significant influence on the Vietnamese government.”*<sup>3</sup> Even Samsung itself acknowledges its political influence. In an interview with the Vietnamese press, former Samsung Vietnam General Director, Shim Won Hwan, commented on the company’s preferential treatment, stating that, *“...all of the preferential treatments lie within the Vietnamese legal framework. Samsung is investing heavily in the high-tech sector—where the government of Vietnam is enthusiastically calling for more investment—and thus we are able to enjoy the highest level of policy incentives.”*<sup>4</sup>

### SAMSUNG SUPPLIERS’ NON-COMPLIANCE WITH WASTEWATER TREATMENT STANDARDS

According to Samsung’s internal investigations, some suppliers did not have a wastewater treatment contract with the industrial park. These suppliers discharged toxic wastewater without proper treatment. Even in suppliers that contained a wastewater treatment facility, there were cases where wastewater was discharged into storm drains without ever going through any wastewater treatment. This was especially the case in suppliers with painting processes, which use highly hazardous chemicals. Wastewater and waste paint from painting operations has been discharged into storm drains that lead directly to the environment. Discharges of air compressor wastewater into storm drains have been very common, as well as oil spills from chemical storage.

4. 주요 위반사항 / Hạng mục vi phạm nghiêm trọng “ Priority”			
Hạng mục Hạng mục	위반회사 Công ty vi phạm	비율/70개사 Tỉ lệ/70 vendor	위반 내용 Nội dung vi phạm
C3.1 유해물질관리	1	1%	<ol style="list-style-type: none"> <li>화학물질 용기 3단 이상 적재 Kho hóa chất để hóa chất quá cao, không đảm bảo an toàn</li> <li>생산공정 배기 풍속 억압 / Khu vực sản xuất hệ thống hút mùi kém.</li> <li>화학물질 정위치 미 보관 Hóa chất để không đúng nơi quy định (phòng bảo vệ)</li> <li>MSDS 관리 미흡, 각 구역 미 비치 MSDS tại xưởng không được hiển thị rõ ràng và không thể hiện chung cho từng khu vực.</li> <li>화학물질 사고 대응용 용품 미구비 (비상사위기, 세안병 없음) Không có thiết bị xử lý khi xảy ra sự cố hóa chất (Không có vớt tràn khẩn cấp, bình rửa mắt khẩn cấp)</li> </ol>
C7.1 수질 오염관리	5	11%	<ol style="list-style-type: none"> <li>도료 폐수처리장 폐수를 우수에 직방류 Nước thải khu sơn gom bột sơn xả trực tiếp ra đường nước mưa.</li> <li>페 페인트 폐수는 우수로 직방류 Nước thải sơn chảy trực tiếp ra đường nước mưa.</li> <li>코팅공정 뒷면에 폐수 누출로 우수 관로 오염 Đường nước mưa phía sau tường công đoạn Coating bị ô nhiễm do nước thải chảy xuống.</li> <li>우수관로 정기적으로 미점검, 공기 압축기 폐수 우수관로 배출 Chưa quản lý vấn đề bất kỳ kiểm tra đường nước mưa định kỳ, hóa chất khu xử lý nước thải máy nén khí tràn ra môi trường</li> <li>화학물질 저장소 관리 미흡, 오일 유출 상태 유지 Chưa quản lý kiểm soát triệt để khu vực kho hóa chất luôn trong tình trạng có dầu tràn ra ngoài môi trường</li> </ol>

Priority violations related to wastewater treatment found during routine inspections of Samsung Electronics’ suppliers in Vietnam. The example circled in red states: *“1. In a wastewater treatment plant which handles paint wastes, wastewater is directly discharged to storm drains; 2. Paint wastewater discharges directly into storm drains; 3. Wastewater leakage behind the coating process contaminated storm drains; 4. No periodic inspection of storm drains and discharge of wastewater from an air compressor into storm drains; 5. Inappropriate management of chemical storage and oil spills are left unattended.”*



Pollutants leaking from outdoor equipment and entering storm drains without proper treatment.

### SAMSUNG SUPPLIERS OPERATING WITHOUT ENVIRONMENTAL IMPACT ASSESSMENT

Samsung’s investigations revealed that a supplier built a new wastewater treatment plant without an environmental impact assessment report and operated it for at least six months without a permit. As a result, this Samsung supplier illegally discharged wastewater without proper treatment. There are many suppliers whose wastewater measurement results exceed legal standards. In some cases, suppliers have been penalized by the Vietnamese government for wastewater discharges, but it is difficult for Samsung Electronics to know unless the supplier informs the company. In cases where Samsung did find out about regulatory penalties it was not due to communication from suppliers but through other channels. The photo below shows examples of priority violations related to wastewater treatment in Samsung’s suppliers revealed by the Bac Ninh Plant EHS team.

□ 주요 위반사항 " Priority "			
Hạng mục vi phạm nghiêm trọng " Priority "			
항목 Hạng mục	위반회사 Công ty	위반율 Tỉ lệ	위반 내용 / Nội dung vi phạm
B4.2 건강 검진	2개사-	6%	<ul style="list-style-type: none"> <li>직원 100% 건강검진 미완료 Không khám sức khỏe định kỳ cho 100% nhân viên công ty</li> <li>위험구역 작업하는 직원 대상은 특수건강검진 미실시(X-Ray) Không khám sức khỏe đặc biệt đối với nhân viên làm tại khu vực nguy hiểm</li> <li>전직원 건강검진 미실시 Công ty chưa tiến hành khám sức khỏe cho toàn bộ nhân viên</li> </ul>
C1.1 환경 안, 허가	3개사-	10%	<ul style="list-style-type: none"> <li>신규 오폐수 처리장 구축하는 데 환경영향평가 보고서 미작성 Chưa làm lại phê duyệt ĐTM khi xây dựng thêm khu xử lý nước thải</li> <li>공기 압축기 발생 폐수는 우수로 직방류 Nước thải của máy nén khí xả trực tiếp ra đường nước mưa (Có lẫn dầu trong nước thải)</li> <li>공업단지와 오폐수 처리 계약 없음 Chưa có hợp đồng xử lý nước thải với Ban quản lý khu công nghiệp</li> </ul>
C1.2 환경 모니터링	3개사-	10%	<ul style="list-style-type: none"> <li>환경모니터링 BOD, COD, 암모늄 기준 초과 Kết quả quan trắc môi trường BOD, COD, Amoni vượt quá tiêu chuẩn luật</li> </ul>

Priority violations related to wastewater treatment found during routine inspections of Samsung’s suppliers in Vietnam. The circled entry says “Environmental impact assessment report not completed to build new sewage and wastewater treatment plant; Air compressor-generated wastewater is directly discharged to storm drains; No contract for wastewater treatment with the industrial park.”

## SAMSUNG SUPPLIERS FAIL TO MEASURE WASTEWATER COMPLIANCE

According to Samsung’s investigations, the company’s suppliers in Vietnam often fail to comply with environmental regulations concerning measurement cycles and do not measure certain required items. Sometimes, Samsung’s suppliers do not measure anything at all.

□ 주요 부적합 "Priority"	
항목	위반내용
B402	1. 드라이버와 편에 공통 콘센트를 사용으로 전기 불안전이 발생 우려
	2. 전기 패널 내에 자동 환산소화기 장착되어 있어야 함
	3. 전원 케이블 아래에 물이 많이 있으며 매우 위험함
	4. 전기판넬 외함에 접지 미설치
	5. 전기판넬에 구멍이 있고 마감 미설시
	6. 전선의 색상이 혼합되어 전압선과 접지선이 무엇인지는 알 수 없음. 접지선이 노란색, 전선이 검은 색이며 각 aptomat의 Output 접지선을 구별해야 함)
C701	1. 신축 공장의 폐수 환경을 모니터링하지 않음
	2. 발전기가 오일로 작동하지만 오일 누출 방지 다이크 미설치
	3. 공기 압축기의 폐유는 배출되기 전에 오일트랩에서 분리되지 않았음

Priority environmental measurement violations found during routine inspections of Samsung Electronics suppliers in Vietnam. The circled entry says, "Does not monitor wastewater environment in the new plant."

## SAMSUNG SUPPLIERS' WASTEWATER DISCHARGE EXCEEDS LEGAL STANDARDS

One of the most important aspects of managing a wastewater treatment facility is monitoring to ensure that it does not exceed legal discharge standards. However, the Bac Ninh Plant EHS team often finds that suppliers do not perform any monitoring. When monitoring is performed, measurements of discharged wastewater have shown that they often exceed legal standards. This even includes measurements of basic parameters such as

biological oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), ammonia, and bacterial count, among others.

These violations of legal standards indicate a problem with the design or management of the wastewater treatment facility. The photo on the right is an example of Samsung’s documentation of violations recorded at suppliers in Vietnam.

□ 주요 부적합 / hạng mục vi phạm nghiêm trọng "Priority"		
항목 Hạng mục	비율/SS개사 Tỉ lệ / SS	부적합 내용 Nội dung vi phạm
B4.2	1 개사	1. 사원들에 대한 건강검진 미 실시 Công ty chưa khám sức khỏe cho toàn bộ công nhân viên 2. 인쇄구역 국소배기 미 설치, 납땜 구역 풍속 부적합 Khu vực máy in chưa quây kín, lập hệ thống hút môi, khu vực hàn chưa hút khí triệt để
B8.1	1 개사	1. 노동위생 안전교육 미 실시 Công ty chưa thực hiện huấn luyện an toàn về sinh lao động
C1.2	1 개사	1. 환경모니터링 법적기준 초과(NH4: 2.9배, BOD5: 1.06배) Phân tích các chỉ tiêu quan trắc môi trường bị vượt so với tiêu chuẩn: Sunfua vượt 4,18 lần, Amceci vượt 2,9 lần, BOD5 vượt 1,06 lần.

Suppliers with "priority" nonconformities due to exceeding legal standards for environmental monitoring. The circled entry says "Environmental monitoring exceeds legal standards (ammonia exceeded by 2.9-fold, biological oxygen demand exceeded by 1.06-fold)."

## POSSIBLE VIOLATIONS OF REGULATIONS IN VIETNAM

In 2019, Vietnam issued Decree 40/2019/ND-CP. This Decree amends and supplements several articles of old decrees to detail and guide the implementation of the Law on Environmental Protection. The Decree is considered to have been developed and issued to provide several urgent tasks and solutions for environmental protection. This Decree is considered to emphasize the government's concern for environmental protection as stated by the Prime Minister at the time: *“Do not develop the economy at all costs; Do not trade the environment for the economy.”*<sup>5</sup>

According to this Decree, all the following establishments need to register an environmental protection plan that includes detailed plans for regular environmental monitoring:

Production, business, and service establishments that produce:

- Wastewater from 20 m<sup>3</sup>/day to less than 500 m<sup>3</sup>/day
- Solid waste from 1 ton/day to less than 10 tons/day
- Emissions to air from 5,000 m<sup>3</sup>/hour to less than 20,000 m<sup>3</sup>/hour

If facilities emit more than these upper limits, they fall under Appendix II of Decree 08/2022/ND-CP.

Facilities causing severe environmental pollution are defined as facilities violating regulations on discharge of wastewater; emission of dust and exhaust; causing noise pollution or vibration; or exceeding safe limits on waste or burying, dumping, and discharging solid waste or hazardous waste. If the regulatory violations are serious, the company may face an additional penalty of mandatory suspension as prescribed in the decree on penalties for administrative violations in environment protection.<sup>6</sup>

Facilities must install an automatic and continuous wastewater monitoring system (including automatic and continuous monitoring equipment and automatic sampling equipment) equipped with CCTV and transmit the data directly to the Ministry of Natural Resources and Environment. Automatic and continuous wastewater monitoring parameters include: flow (influent and effluent), temperature, pH, total suspended solids, chemical oxygen demand, and ammonia. For cooling water containing chlorine or chlorine-based disinfectants, companies must monitor flow, temperature, and chlorine level. The automatic and continuous wastewater monitoring system with CCTV must undergo testing, survey, and calibration as per Decree No. 08/2022/ND-CP *“Elaboration of Several Articles of the Law on Environmental Protection.”*

The responsibilities of the Ministry of Natural Resources and Environment with regards to wastewater monitoring are: supervise the data of automatic and continuous wastewater monitoring; evaluate measurement results each day (every 24 hours) and compare them with maximum permissible limits of pollution parameters according to the technical regulations on waste; and supervise and inspect the handling measures in the following cases: monitoring data is interrupted or parameters exceeding technical regulations on the environment are detected. In those cases, the Ministry must propose measures as prescribed by law.

In Vietnam, the Law on Chemicals established in November 2007 (06/2007/QH12) regulates the activities of investment, production, packaging, commerce, export, import, transportation, storage, usage, research, testing, and chemical waste handling. Article 30, paragraph 2d regulates the obligation of companies using chemicals to provide precise and timely guidance on safe chemicals for workers. Article 58 stipulates the obligation of companies using chemicals to collaborate with local authorities to inform communities about chemical safety. Article 52 is about reporting forbidden chemicals. Every year, before January 31st, users of forbidden chemicals are responsible for reporting to the respective Department and the Ministry of Trade and Industry. The Law on Chemicals is in the process of being revised.<sup>7</sup>

Vietnam began to assemble a national chemical inventory (NCI) in 2012 with the stipulation that substances not listed in the inventory would be classified as new substances and require registration before import, use or production in Vietnam.<sup>8</sup> As of 2021, the final inventory was not yet issued.<sup>9</sup>

## SAMSUNG'S OPERATIONS IN VIETNAM WOULD BE PENALIZED IN SOUTH KOREA

Samsung Electronics' factories in Vietnam have operated in a way that would violate relevant laws in South Korea. Key examples of issues reported by the Samsung whistleblower and how they would be penalized under South Korean law are shown in the table below. To our knowledge, none of Samsung's operations in Vietnam that violate South Korean laws have been penalized in Vietnam. Samsung's response to the Newstapa reports that illustrate noncompliance with Vietnamese laws and company standards was, "We are thoroughly complying with environmental safety-related laws and regulations at workplaces around the world."<sup>10</sup>

### Examples of how Samsung Vietnam's environmental health and safety issues would be penalized under South Korean laws if they had occurred in South Korea Double standards

ENVIRONMENTAL HEALTH AND SAFETY ISSUES	RELEVANT KOREAN LAW	PENALTY
Air pollution emissions	Air Quality Conservation Act; Article 31; Operation of Emission and Prevention Facilities; Paragraph 1 No. 5	Imprisonment up to seven years or a fine up to 100 million won (~USD\$76,400 or €71,300)
	Chemical Substance Management Act; Article 24; Standards for Arrangement, Installation and Management of Handling Facilities, etc.; para 1	Unable to obtain factory authorization.
	Chemical Substance Management Act; Article 24; Standards for the placement, installation, and management of handling facilities, etc.; para 6	Imprisonment up to three years or a fine up to 50 million won (~USD\$38,200 or €36,600)
Chemical wastewater discharge	Water Environment Conservation Act; Article 15; Prohibition of Emission, etc. of the para 1 No. 1	Imprisonment up to three years or a fine up to 30 million won (~USD\$23,000 or €21,400)
	Chemical Substance Management Act; Article 24; Standards for Arrangement, Installation and Management of Handling Facilities, etc.; para 1	Unable to obtain factory authorization.
	Chemical Substance Management Act; Article 24; Standards for Arrangement, Installation, and Management of Handling Facilities, etc.; para 6	Imprisonment up to three years or a fine up to 50 million won (~USD\$38,200 or €36,600)
Safety and health issues - Use of toxic chemicals without adequate shielding, ventilation, or air protection facilities - Improper protection, or working without protection - Improper handling of hazardous chemicals and waste disposal - Hazardous neglect of explosive, ignitable and flammable substances, etc.	Industrial Safety and Health Act Article 38; Safety Measures; para 1 – 3 Article 39; Health Measures; para 1	Imprisonment up to five years or a fine up to 50 million won (~USD\$38,200 or €36,600)
		In the event of a worker's death due to a violation of the law: Imprisonment up to seven years or a fine up to 100 million won (~USD\$76,400 or €71,300)

## DOUBLE STANDARDS

Companies often operate factories in countries with less rigorous standards of worker and environmental protection as a cost-saving measure. Their factory operations would fail regulatory compliance at home, but continue externally due to the use of double standards. The domestic version of this practice obtains cost savings by outsourcing work involving toxic chemicals or processes to subcontractors who provide cheap labor and carry the potential harm of the process.

In the international use of double standards, regulations or public pressure may result in the control or phase-out of toxic substances or processes in one country but then appear in the company's factory in another country that lacks these regulatory pressures. In the domestic version of double standards, the supplier may perform tasks to fulfill contract obligations in a way that would not be permitted in the company's own factory due to cost pressures, a lack of oversight, or other reasons.

When factory pollution or an occupational injury or illness occurs in another country, companies typically say they are following all national laws — even when there are no regulations. If the injury or illness happens domestically, then companies simply claim that the supplier's employees are not their responsibility, even if they are actually performing the tasks inside the main factory's premises. The use of double standards in this way is often described as outsourcing harm.

True industry leaders would approach both domestic and multinational operations by fulfilling human rights obligations and applying the most rigorous standards of worker and environmental protection worldwide in their factories and suppliers, even in countries that lack rigorous laws or domestically in suppliers with less environmental and occupational safety infrastructure. This strategy would enable companies to advocate for strong national regulations and practices in all countries of operation as a strategy to gain competitive advantage over competitors who are outsourcing harm and running dangerous manufacturing facilities.

## HUMAN RIGHTS VIOLATIONS

Samsung Electronics' consistent pattern of externalizing the costs of pollution from mobile phone and appliance production onto Vietnam's communities, environment and workers violates human rights. In 2011,<sup>11</sup> the UN Human Rights Council endorsed the UN Guiding Principles on Business and Human Rights. In 2022, the UN General Assembly declared access to a clean, healthy and sustainable environment a universal human right.<sup>12</sup> Also in 2022, the International Labor Organization (ILO) included "*a safe and healthy working environment*" as a fundamental principle and right at work.<sup>13</sup> In 2023, the UN Committee on Rights of the Child issued a new guidance that affirms children's right to live in a clean, healthy and sustainable environment.<sup>14</sup> Also in 2023, Members of South Korea's National Assembly introduced Asia's first bill to require human rights and environmental due diligence for businesses.<sup>15</sup>

Samsung publicly claims commitment to respect these and other international human rights principles and standards. The company states that this commitment also applies to suppliers, third-party contractors, subcontractors, partners, and resellers, among others. However, human rights principles and standards should be compared with the outcomes of Samsung's internal investigations that have revealed irresponsible chemicals management and widespread pollution at its factory and supplier operations in Vietnam and management indifference to addressing it.

## A CLEAN, HEALTHY, AND SUSTAINABLE ENVIRONMENT IS A UNIVERSAL HUMAN RIGHT

The 2022 UN General Assembly resolution, "*The human right to a clean, healthy and sustainable environment*," recognizes that "*...the pollution of air, land and water, the unsound management of chemicals and waste*" and other environmental harms "*interfere with the enjoyment of a clean, healthy and sustainable environment and that environmental damage has negative implications, both direct and indirect, for the effective enjoyment of all human rights.*"<sup>17</sup> The resolution also notes the "*responsibility of all business enterprises to respect human rights.*" The text of the resolution and its implications starkly contrast with Samsung's operations in Vietnam.

As noted in Chapter 2, Samsung's Bac Ninh plant released untreated chemical-containing air pollution for approximately seven years. When upper management at headquarters in Seoul became aware of the problems, they responded with silence. Residents living nearby noted that they *"had been tortured by the bad smells from the factory"* and that the pollution caused coughing and sickness.<sup>18</sup> After the company's Bac Ninh plant grossly polluted the air for years, Samsung did not fix the problem, but instead outsourced the harm by transferring the toxic operations producing bad odors to its suppliers — companies with even less capacity and awareness of environmental health and safety.<sup>19</sup> These toxic operations at suppliers are currently ongoing. Samsung's investigations have revealed poor air pollution control management in its suppliers and as a result, odors are always emitted from supplier factories, indicating chemical releases. Samsung's EHS team has documented poor maintenance of air pollution control facilities in the company's suppliers including failure to periodically replace the activated carbon. The lifespan of activated carbon is about one month, but suppliers usually replace it every six months. The consequences of air pollution are serious. According to the World Health Organization (WHO), *"air pollution is the largest cause of disease and premature death in the world, with more than seven million people dying prematurely each year due to pollution."*<sup>20</sup>

The UN General Assembly resolution also includes water pollution. As outlined in Chapter 2, Samsung operated its Bac Ninh plant for three years without a wastewater treatment facility to treat toxic chemical-containing production wastes. Instead of treating these wastes, they were secretly dumped into the environment. A former worker at the Bac Ninh plant in charge of cleaning chemical tanks noted that, *"the company subcontracted to do the disposal would dump the materials into a nearby river."*<sup>21</sup> Samsung has also frequently found its supplier factories in Vietnam to be discharging untreated wastewater directly into storm drains that lead to rivers. In addition, there are many cases where chemical-containing wastewater leaks from outdoor facilities, or chemical-containing wastewater generated indoors leaks outdoors.

The direct release of toxic chemical pollutants to air, land and water by Samsung and its suppliers in Vietnam is a violation of the right to a clean, healthy, and sustainable environment.

## A SAFE AND HEALTHY WORKING ENVIRONMENT AS A FUNDAMENTAL PRINCIPLE AND RIGHT AT WORK

In 2019, the 108th session of the International Labor Conference adopted the ILO Centenary Declaration for the Future of Work and Vietnam pledged to fully support it.<sup>22 23</sup> The Declaration includes, *"promoting workers' rights as a key element for the attainment of inclusive and sustainable growth, with a focus on freedom of association and the effective recognition of the right to collective bargaining as enabling rights" as well as "achieving gender equality at work..."*<sup>24</sup>

In 2022, the ILO updated the ILO Declaration on Fundamental Principles and Rights at Work to include *"a safe and healthy working environment"* as a fundamental principle and right at work.<sup>25</sup> ILO describes the Fundamental Principles as, *"an expression of commitment by governments, employers', and workers' organizations to uphold basic human values — values that are vital to our social and economic lives. It affirms the obligations and commitments that are inherent in membership of the ILO..."*<sup>26</sup> Furthermore, under the Declaration, ILO Members, *"regardless of their level of economic development, commit to respect and promote these principles and rights, whether or not they have ratified the relevant Conventions."*<sup>27</sup> Note that both South Korea and Vietnam have ratified the ILO Convention on Occupational Safety and Health (No. 155) and the Promotional Framework for Occupational Safety and Health Convention (No. 187).<sup>28</sup>

Samsung's internal investigations in Vietnam revealed that its factory in Bac Ninh lacked local exhaust systems to send polluted air from production processes to air pollution control facilities. This violated company standards and routinely exposed workers to toxic chemicals in numerous production processes (please see Chapter 2). In 2021, a Samsung investigation at the company's Ho Chi Minh appliance factory showed oil spills and chemical leaks contaminating the factory floor, posing a danger to workers.

Samsung's management of its suppliers is also relevant to a safe and healthy working environment. For example, at one supplier company, a dust collection duct exploded, injuring 34 workers.<sup>29</sup> Poor management of basic safety issues caused the explosion. In addition, the supplier received poor or failing marks in evaluations of its EHS practices over a period of two years before the accident. Despite repeated poor or

failing evaluations, Samsung disregarded the findings of its own investigations and continued doing business with this supplier as if nothing was wrong. This demonstrates that a safe and healthy work environment at its suppliers is a low priority for the company.

Samsung Electronics has a Supplier Code of Conduct that the company says is based on the Responsible Business Alliance (RBA) Code of Conduct.<sup>30 31</sup> However, there are some significant differences between the two Codes that make the Samsung Electronics Code significantly weaker than the RBA Code. Chapter 3 outlines these differences in detail, but here are a few examples. The RBA Code has the following elements but the Samsung Code deletes these statements:

- Studies of business practices clearly link worker strain to reduced productivity, increased turnover, and increased injury and illness.
- ... ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace.
- Workers must be given a safe environment to provide grievance and feedback without fear of reprisal or retaliation.
- Emergency drills must be executed at least annually or as required by local law, whichever is more stringent.

Samsung's internal investigations, normal business practices, and management approach demonstrate violations of the human right to a safe and healthy working environment.

## THE ELECTRONICS INDUSTRY EXPERIENCE IN SOUTH KOREA IS RELEVANT TO VIETNAM

South Korea's experience with the electronics industry is highly relevant to Vietnam, which has prioritized the industry as a key development strategy (please see Chapter 1 and Annex 1). The human right to a safe and healthy environment, including the work environment, starkly contrasts with the grim history of environmental pollution, occupational illness, and death in the South Korean electronics industry.

Scientific studies have documented a variety of occupational hazards in the “regular-tech” South Korean electronics industry (i.e. not the high-tech semiconductor industry). Health impacts include reproductive damage in both women and men due to cleaning solutions; amyotrophic lateral sclerosis (ALS) disease possibly related to lead exposure; and damage to the peripheral nervous system due to n-hexane exposure.<sup>32 33 34</sup> Health impacts in the electronics industry are not legacy issues and continue to occur. In 2022, the South Korean Ministry of Employment and Labor raided Doosung, an electronic parts maker, after 16 workers were poisoned with chloroform.<sup>35</sup> In 2023, another seven workers were poisoned by chloroform at an electronic component manufacturer in the city of Icheon, prompting the Ministry of Employment and Labor to conduct special inspections of workplaces handling cleaning agents nationwide.<sup>36</sup>

Scientific research in South Korea has also highlighted the seriousness of occupational cancer and rare diseases among workers in the high-tech electronics industry. These include a study which warned of the reproductive health and cancer risks of semiconductor workers through a comprehensive review of existing studies; the working environment characteristics of disease cases reported to SHARPS; an examination of reproductive risks among female high-tech electronics industry workers that found a significantly higher risk for spontaneous abortion and menstrual aberration; identifying carcinogens in chemicals used in semiconductor factories and their exposure risks; and limitations of pre-existing hazardous chemical exposure management and exposure assessment methods.<sup>37 38 39 40 41 42 43 44 45</sup>

By July 2023, there were more than 700 cases of occupational diseases in South Korean electronics industry workers reported to SHARPS, including more than 200 deaths. Most of these cases are from Samsung Electronics or Samsung Display, but this likely represents a small portion of a much bigger problem. According to an epidemiological study on occupational cancers in the semiconductor industry by the South Korean government-affiliated Occupational Safety and Health Research Institute, 3,442 cancer cases including 1,178 deaths were found.<sup>46</sup> The total number of occupational disease cases in the semiconductor industry is likely to be much higher, considering that this study was limited to cancer from only six

semiconductor companies.<sup>47</sup> Moreover, no epidemiological study has been conducted in South Korea on other types of electronics industries besides the semiconductor industry.

Of the 700 cases reported to SHARPS, 179 workers filed workers' compensation claims for a total of 38 types of diseases with the support of SHARPS. These workers were from various companies, including Samsung Electronics and Samsung Display (118), SK Hynix (13), LG Display and LG Electronics (5), and Amkor Technology Korea (5). Of the 179 workers, a total of 98 (55%) have been recognized as eligible to receive workers' compensation. Most of the diseases have been recognized as eligible for workers' compensation in the electronics industry for the first time in South Korea. These include occupational cancers such as leukemia and lymphoma (38 cases), breast cancer (16 cases), brain tumors (13 cases), lung cancer (6 cases), and ovarian cancer (3 cases), as well as rare and incurable diseases such as lupus (3 cases) and multiple sclerosis (3 cases), and reproductive health problems such as infertility.

Even though Vietnam is not currently manufacturing semiconductor chips like South Korea or Taiwan, the country is trying to attract semiconductor manufacturing with US encouragement.<sup>48</sup> In September 2023, US companies including Amkor, GlobalFoundries, Intel, and Marvell met representatives in Vietnam during US President Biden's visit to the country. The resulting partnership agreement "*includes an agreement on semiconductors, with the United States committing to help Vietnam develop its capabilities and expand production*" as well as cooperation on rare earth minerals as Vietnam has the world's second-largest deposits after China.<sup>50</sup>

The Ministry of Planning and Investment, the Ministry of Information and Communications, and other relevant ministries are currently developing action plans and strategies for the semiconductor manufacturing industry in Vietnam. Currently, a workforce development project aims to train 50,000 technology engineers by 2030.<sup>51</sup> In addition, Vietnam has established the National Innovation Center (NIC) and three high-tech zones, ready to welcome semiconductor industry investors with high incentives. The NIC and these high-tech zones will play a crucial role in supporting the development of Vietnam's semiconductor industry ecosystem.

Victory Giant (China) and Infineon (Germany) have semiconductor projects in Vietnam.<sup>52</sup> In addition, Vietnam is currently home to the largest chip testing and packaging factory of US technology company, Intel, in the Ho Chi Minh City Hi-Tech Park. Vietnam has become an important part of Intel's global production network. It is estimated that Intel's factory in Ho Chi Minh City accounts for more than 50% of the company's total output globally. Along with Intel, Samsung also announced plans to produce semiconductor components in Vietnam. Mass production of semiconductor chip grid products at Samsung Electro-Mechanics Vietnam in Thai Nguyen province was expected to be carried out at the end of 2023, after trial production was completed.<sup>53</sup> The history of occupational diseases from semiconductor factories in South Korea is highly relevant to Vietnam.

The environmental pollution caused by the electronics industry in South Korea is also relevant to Vietnam. For example, the city of Gumi is a major "*regular-tech*" electronics manufacturing hub in South Korea with more than 1,700 companies including a Samsung mobile phone manufacturing plant. A 2015 study examining toxic volatile organic compounds (VOCs) in city air found toxic chemicals used in the electronics industry such as benzene, toluene, m,p-xylenes, formaldehyde, acetaldehyde, and methyl ethyl ketone to be "*ubiquitous*."<sup>54</sup> The monitoring data found that toluene, trichloroethylene, and acetaldehyde were the most significant toxic substances in city air and that their major sources were industrial.

As the high-tech electronics industry expands in South Korea, its projected environmental impact also increases. In Pyeongtaek, approximately one million tons of wastewater from chip factories (including Samsung) will be released into public waterways by 2030.<sup>55</sup> An environmental impact assessment carried out by city officials notes potential impacts on local ecosystems and a researcher from the National Institute of Environmental Research (a South Korean government institution) stated that fluorinated compounds and copper deposits in the wastewater could "*cause toxicity and damage plant and animal life around the factories*."<sup>56</sup> A government ruling party committee dealing with the semiconductor sector was led by a former Samsung executive who advocated for "*making it easier for companies to get exemptions from time-consuming feasibility studies*."<sup>57</sup>

Samsung operations in the US also illustrate its environmental impact. In 2021, Samsung Semiconductor in Texas spilled approximately 250,000 liters of toxic wastewater into a river tributary.<sup>58</sup> In 2022, the same Samsung factory released nearly 3 million liters of toxic wastewater into the same river tributary and the spill went on for more than three months.<sup>59</sup> Regulators noted that they “*found virtually no surviving aquatic life within the entire tributary.*”<sup>60</sup>

The South Korean electronic industry’s grim history of pollution and occupational illness has raised concerns that this experience should not be repeated in Vietnam or anywhere else.

## CHILDREN’S RIGHT TO LIVE IN A CLEAN, HEALTHY, AND SUSTAINABLE ENVIRONMENT

The UN Convention on Rights of the Child has been ratified by 196 countries, including South Korea and Vietnam.<sup>61</sup> In 2023, the UN Committee on Rights of the Child issued General Comment 26 which affirmed children’s right to live in a clean, healthy and sustainable environment and places special emphasis on the “*climate emergency, the collapse of biodiversity, and pervasive pollution.*”<sup>62</sup> This new legal guidance notes that, “*Pollution associated with past and present industrial activities, including exposure to toxic substances and hazardous waste, presents more complex threats to health, often resulting in effects long after exposure.*”<sup>63</sup> The guidance also calls out business behavior noting that, “*Business activity is a source of significant environmental damage, contributing to child rights abuses. Such damage results, for example, from the production, use, release and disposal of hazardous and toxic substances...*”<sup>64</sup>

UNICEF estimates that in Vietnam, there are more than 26 million children under age 18.<sup>65</sup> This represents more than 25% of the population.<sup>66</sup> Toxic factory production wastes released to air, land, and water by Samsung factories and suppliers are highly relevant to this Convention and its recently updated legal guidance. In addition, workers at the company’s factories or suppliers who are injured or sickened can impact children at home.

Impacts on reproduction are also highly relevant to children’s rights. In South Korea, an analysis of epidemiological data found evidence suggesting reproductive risks to women from semiconductor fabrication jobs including spontaneous abortion, congenital malformation, and reduced fertility.<sup>67</sup> A subsequent examination of reproductive risks among female high-tech electronics industry workers aged 20 – 39 years old found a significantly higher risk for spontaneous abortion and menstrual aberration.<sup>68</sup> A 2017 study of female workers at Samsung’s mobile phone factories in Vietnam noted that miscarriage was “*very normal.*”<sup>69</sup>

Samsung’s internal investigations show that the company and its suppliers are responsible for historical and ongoing pollution of air, land, and water in Vietnam, demonstrating violations of children’s right to a clean, healthy, and sustainable environment.

## ASIA’S FIRST PROPOSED LAW TO REQUIRE HUMAN RIGHTS AND ENVIRONMENTAL DUE DILIGENCE FOR BUSINESSES

In September 2023, Members of South Korea’s National Assembly introduced a proposal for the Corporate Human Rights and Environmental Protection Act, “*which stipulates the requirements for corporate human rights and environmental due diligence and specifies the responsibility of companies to respect human rights and the environment in their global supply chains.*”<sup>70</sup> The draft law is based on international guidance including the UN Global Compact 10 Principles, the UN Guiding Principles on Business and Human Rights, and the OECD Due Diligence Guidelines. The proposal includes the following five elements: 1) establishment and internalization of human rights policy; 2) human rights impact assessment; 3) establishment and implementation of a human rights management system; 4) monitoring and disclosure; and 5) a grievance mechanism. The proposed law has not yet been passed but it would provide guidance for implementation of human rights principles in Samsung’s operations since it targets companies with more than 500 full-time employees or 200 billion won in sales. Samsung has publicly committed to all foundational international human rights standards on which this proposed law is based and should fully support its passage so that its public commitment to human rights can be implemented in a more tangible form.

## UN GUIDING PRINCIPLES ON BUSINESS AND HUMAN RIGHTS

The UN Guiding Principles on Business and Human Rights “requires” that businesses avoid “causing or contributing to” adverse human rights impacts through their activities and address such impacts when they occur. Businesses should “prevent or mitigate” impacts “directly linked” to operations, products, or services by their business relationships, even if they have not contributed to those impacts.<sup>71</sup> Examples of how Samsung’s operations have violated the UN Guiding Principles on Business and Human Rights are shown below.

### Examples of violations of the UN Guiding Principles on Business and Human Rights

UN GUIDING PRINCIPLES ON BUSINESS AND HUMAN RIGHTS	PRODUCTS / ACTIVITIES
<p>The responsibility to respect human rights requires that business enterprises:</p> <p>a. Avoid causing or contributing to adverse human rights impacts through their own activities, and address such impacts when they occur;</p>	<p>Samsung’s Bac Ninh plant released untreated chemical-containing air pollution for approximately seven years.<sup>73</sup></p> <p>For three years of operation, Samsung’s Bac Ninh plant did not have a wastewater treatment facility to treat toxic chemical-containing production wastes and they were dumped into the environment.<sup>74-75</sup></p> <p>Raw sewage from Samsung Electronics’ Bac Ninh factory overflowed into the environment illegally for approximately four years without purification.<sup>76-77</sup></p>
<p>b. Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.</p>	<p>Noncompliance violations of EHS standards at suppliers in Vietnam were often not prevented or mitigated and are ongoing.<sup>78-80-81</sup></p> <p>According to Samsung, lack of compliance with the Supplier Code of Conduct can result in suspension or termination of a contract with a supplier. However, in practice even if a supplier has serious non-compliance with EHS standards, Samsung management ignores it and continues the business relationship.<sup>82</sup></p> <p>Samsung’s management of hazardous and prohibited substances relies on data entered online by suppliers. This invites answers that are not true. In fact, the use of restricted substances by Samsung’s suppliers has been confirmed internally in 2021 and has occurred as recently as 2023.<sup>83-84-85</sup></p>
<p>Where business enterprises identify that they have caused or contributed to adverse impacts, they should provide for or cooperate in their remediation through legitimate processes.</p>	<p>Samsung investigators informed top-level management about the company’s extensive air and water pollution at the Bac Ninh plant repeatedly but senior management remained silent.<sup>86</sup> As a result, after years of extensive air and water pollution, no remediation occurred.</p> <p>In 2023, a methanol poisoning at a Samsung supplier in Vietnam killed one worker, blinded at least 3 teenagers, and poisoned 33 others. Samsung refused to take any responsibility. SHARPS noted that, “Samsung has publicly stated that it restricts the use of methanol by its suppliers but no action was taken even after a victim was hospitalized in a coma. The family of the victim, who suspected the toxicity of the alcohol, sent it to the poison control center, revealing the problem.”<sup>89-90</sup></p>

In order to account for how they address their human rights impacts, business enterprises should be prepared to communicate this externally... communications should:

b) Provide information that is sufficient to evaluate the adequacy of an enterprise's response to the particular human rights impact involved;

Many findings about the extensive air and water pollution at Samsung's Bac Ninh plant emerged as a result of company investigations in 2012, but the company's 2013 Sustainability Report which reported on actions in 2012, ironically noted that the company has a "*commitment to sustainable development and social responsibility through eco-driven business and management activities.*"<sup>91,92</sup> In contrast to the results of its own investigations, the Sustainability Report claims that "*harmful effects are minimized and environmental incidents are prevented at the source*"<sup>93</sup> Pollution problems continued to be identified after 2012, but Samsung's Sustainability Reports hid this fact.<sup>94</sup>

The 2013 Sustainability Report section on air pollutant management, states that the company has been, "*installing optimal prevention facilities when increasing new production lines, and continuously performing efficiency enhancement activities at its prevention facilities.*"<sup>95</sup> However, the company built the Bac Ninh plant with inadequate, incorrectly sized air pollution control facilities and then failed to resolve that problem and instead operated it in violation of Samsung's own regulations by removing both filters and activated carbon, resulting in the discharge of polluted air.<sup>96,97,98</sup>

The 2013 Sustainability Report section on wastewater management states that, "*Samsung Electronics discharges all wastewater generated by its workplaces after processing it at internal processing facilities*" and that all discharge water is monitored.<sup>99</sup> However, the company's investigation showed that the Bac Ninh factory did not even have a wastewater treatment facility for three years of operation and just dumped toxic wastewater directly into the environment.<sup>100,101</sup>

The 2022 Sustainability Report which reported on actions in 2021, claims that all chemicals "*are stringently controlled*" and that "*all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems.*"<sup>102</sup> However, in 2021, Samsung's Ho Chi Minh Plant EHS Group documented violations of company policies at its appliance factory in Ho Chi Minh City including discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment, and chemicals leaking inside the factory, posing a danger to workers.<sup>103</sup>

The 2022 Sustainability Report does not mention that the South Korean Supreme Court upheld the convictions of Samsung Electronics Vice President, Kang Kyung-hoon, Choi Pyeong-seok, Executive Director of Samsung Electronics Service, and Park Sang-bum, CEO of Samsung Electronics Service, for actively planning and leading the disruption of trade union activities.<sup>104,105,106</sup> The court also convicted most of the 30 employees who went on trial with them, finding that Samsung "*had engaged in a group-wide union-busting campaign.*"<sup>107</sup>

The 2023 Sustainability report does not mention that the Samsung Semiconductor factory in Texas released nearly 3 million liters of toxic wastewater into a river tributary and the spill went on for more than three months, killing all aquatic life.<sup>108,109,110</sup> The Sustainability Report does not consider this toxic release as a violation of environmental law or a human rights violation. Instead, the Sustainability Report states that, "*the Texas Commission on Environmental Quality (TCEQ) issued a Notice of Corrective Action regarding the wastewater spill at the Samsung Austin Semiconductor LLC. (SAS) of the subsidiary of Samsung Electronics' DS Division, and no financial sanctions such as fines were imposed as of the reporting date.*"<sup>111</sup> No reader would guess the reality of the company's mismanagement from that sentence.

Samsung's sustainability reports have mentioned positive findings of third-party audits of their suppliers in Vietnam but have hidden nearly 13,000 compliance violations at its suppliers as identified by the company's own internal investigations over a four-year period.<sup>112</sup>

## RIGHT TO INFORMATION

The UN Special Rapporteur for Toxics and Human Rights presented a report to the UN General Assembly on the right to information in 2015.<sup>113</sup> Examples of gaps and actions that contradict this right are shown below.

### Examples of violations of the right to information

RIGHT TO INFORMATION ISSUES	ISSUES
<p>States should ensure that individuals and communities, especially those at risk of disproportionate impacts, have information about hazardous substances in their environment, bodies, food and consumer products, including the adverse effects that may result from exposure.</p>	<p>Despite many recommendations from domestic and foreign human rights organizations, Vietnam has not yet established a specialized human rights committee of the National Assembly to supervise specialized state management agencies and ensure human rights in general, including environmental human rights.</p> <p>In fact, environmental protection is still considered to be a centralized control issue by the State, so it does not expand the role of people and communities to participate in control of environmental pollution, and does not promote the supervisory role of social organizations in environmental protection activities.</p> <p>To this day, Vietnam still does not have specific legal regulations on the types of environmental information that must be widely disclosed according to authority and form of disclosure.</p> <p>Issues and areas within the scope of activities of State agencies that must be publicized have been stipulated in many different legal documents. This is considered an obligation to make public and transparent the activities of State agencies, including environmental protection and operations management agencies. Despite such important significance, the public and transparent implementation of State agencies' activities still has many limitations, causing delays and affecting the rights of citizens. The Press Law and the Law on Prevention and Combat of Corruption stipulate the obligation of State agencies to provide information at the request of agencies, organizations, units, and citizens, but the situation of State agencies not responding in writing or refusing to provide information is still common and there are no sanctions.</p> <p>In 2017, CGFED and IPEN raised concerns about working conditions based on testimonies from workers at Samsung factories.<sup>114</sup> However, after Vietnamese authorities investigated Samsung's mobile phone factories, they concluded that the company <i>"had basically followed all regulations on labour contracts, working environment, regular health check-ups, wages and bonuses."</i><sup>115</sup> This indicates regulators acquiesced to numerous EHS issues at the factories and were either not able or not willing to oversee Samsung's EHS practices and publicly report them.</p>
<p>Businesses should undertake robust human rights due diligence for actual and potential impacts of hazardous substances and wastes linked to their activities, including identifying and assessing adverse impacts that may result there from.</p>	<p>Samsung did not provide any information to the public or regulators on untreated chemical-containing air pollutants released from the Bac Ninh plant or their potential adverse effects during the seven years the company discharged them.</p> <p>Samsung did not provide any information to the public or regulators on toxic chemical-containing production wastes that Samsung dumped into the environment at the Bac Ninh plant or the potential adverse effects of such dumping.</p> <p>Samsung did not provide any information to the public or regulators on raw sewage and its potential adverse effects which overflowed from Samsung Electronics' Bac Ninh factory into the environment illegally for approximately four years without purification.</p> <p>Samsung investigators informed top-level management about the company's extensive air and water pollution repeatedly but senior management remained silent.<sup>116</sup></p>

<p>States should ensure that reliable baseline information is generated for the presence of hazardous substances in air, water and soil that may be released by extractive or other industrial activities before such activities begin.</p>	<p>Samsung failed to produce this information at the Bac Ninh plant while building a factory with no wastewater treatment system for production wastes and installing an undersized air pollution control facility.<sup>118 119</sup> Government regulators in Vietnam granted approvals to Samsung factory operations despite these fundamental problems.</p>
<p>Where information is unavailable, States should make the public aware of missing information and exercise caution to prevent possible adverse impacts while information is generated, collected and assessed.</p>	<p>This has not been done in Vietnam for Samsung's factories. The public has learned about environmental violations of Samsung and its suppliers through news media articles when incidents occur. Information released by the media is limited to describing the basic outlines of the incident. The public does not have information about chemical releases, or the next steps such as the investigation agency's conclusions, penalty decisions, etc.</p>
<p>States must actively inform the public of the risks of hazardous substances and wastes, including those at risk of disproportionate impacts. States should ensure that people have access in adequate languages and formats to information on specific adverse impacts of hazardous substances released into their environment and in everyday products.</p>	<p>Decrees and legal documents mention that Vietnamese management agencies should provide a list of production facilities conducting environmental impact assessments or provide reports on inspection results of production facilities. However, there are no clear guidelines or legal sanctions on how these documents should be published. Documents of this type are often missing or difficult to find on the websites of Vietnamese management agencies.</p>
<p>Businesses whose activities result in imminent threats must convey to the government authorities and the public a threat to public health or the environment, providing full access to information about risks, impacts and mitigation measures.</p>	<p>During the seven years Samsung's Bac Ninh plant discharged untreated air pollution into the environment and the three years the factory dumped toxic chemical-containing wastewater directly into the environment, no disclosure to regulators or the public occurred.<sup>120</sup> At that time, Samsung had to disclose environmental releases of more than 200 chemicals through South Korea's PRTR system which made the data publicly available. However, Vietnam did not have a PRTR system, so Samsung opted not to report its releases in Vietnam even though the company did so at home. Currently, there is no public access to information on chemical releases from Samsung factories or suppliers in Vietnam.</p> <p>Samsung's sustainability reports have mentioned positive findings of third-party audits of their suppliers in Vietnam but have hidden nearly 13,000 compliance violations at its suppliers as identified by the company's own internal investigations over a four-year period.<sup>121</sup></p>
<p>Information relevant to the protection of and respect for human rights should never be considered "confidential" or "secret." Health and safety information about hazardous substances and wastes should not be confidential, including emissions into the environment, toxicity studies and chemical identity.</p>	<p>For years, Samsung has blocked compensation of sick workers in South Korea by obstructing key information pertaining to chemical use and exposure of workers, claiming that it is confidential business information.<sup>122 123</sup></p> <p>In 2018, Samsung filed lawsuits against the South Korean Ministry of Employment and Labor to block the release of health and safety information about chemicals, claiming that it contained trade secrets.<sup>124 125</sup> The same year, Samsung successfully requested the Ministry of Trade, Industry and Energy to designate the workplace environmental monitoring report as a national core technology. This designation elevated a report that provides health and safety information about chemical substances to the level of national security.<sup>126</sup></p> <p>In 2019, the National Assembly amended the Act on Prevention of Divulgence and Protection of Industrial Technology (Industrial Technology Act) to reflect Samsung's positions.<sup>127</sup></p> <p>The new law quickly became known as the Samsung Protection Act. Key points that undermine the right to information include: Opaque decision-making by a secret committee; banning disclosure of information related to 'the national core technology;' conflicts with the Information Disclosure Act which ensures people's right to know; vague scope which allows companies to claim all information is related to national core technology and therefore must be kept secret; confining the use of information with criminal punishment; and empowering an intelligence agency to act outside of judicial process.<sup>128</sup></p>

<p>Businesses should communicate information to Governments, and be subject to regulation and strict guidelines about information. Businesses should also communicate to the public relevant information about hazardous substances in their supply chains and products in a user-friendly format.</p>	<p>Many findings about the extensive air and water pollution at Samsung's Bac Ninh plant emerged as a result of company investigations in 2012, but the company's 2013 Sustainability Report which reported on actions in 2012, ironically noted that the company has a <i>"commitment to sustainable development and social responsibility through eco-driven business and management activities."</i><sup>129 130</sup> In contrast to the results of its own investigations, the Sustainability Report claims that <i>"harmful effects are minimized and environmental incidents are prevented at the source."</i><sup>131</sup> Pollution problems continued to be identified after 2012, but Samsung's Sustainability Reports hid this fact.<sup>132</sup></p> <p>The 2013 Sustainability Report section on air pollutant management, states that the company has been, <i>"installing optimal prevention facilities when increasing new production lines, and continuously performing efficiency enhancement activities at its prevention facilities."</i><sup>133</sup> However, the company built the Bac Ninh plant with inadequate, incorrectly sized air pollution control facilities and then failed to resolve that problem and instead operated it in violation of Samsung's own regulations by removing both filters and activated carbon, resulting in the discharge of polluted air.<sup>134 135 136</sup></p> <p>The 2013 Sustainability Report section on wastewater management states that, <i>"Samsung Electronics discharges all wastewater generated by its workplaces after processing it at internal processing facilities"</i> and that all discharge water is monitored.<sup>137</sup> However, the company's investigation showed that the Bac Ninh factory did not even have a wastewater treatment facility for three years of operation and just dumped toxic wastewater directly into the environment.<sup>138 139</sup></p> <p>The 2022 Sustainability Report which reported on actions in 2021, claims that all chemicals <i>"are stringently controlled"</i> and that <i>"all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems."</i><sup>140</sup> However, in 2021, Samsung's Ho Chi Minh Plant EHS Group documented violations of company policies at its appliance factory in Ho Chi Minh City including discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment, and chemicals leaking inside the factory, posing a danger to workers.<sup>141</sup></p> <p>In 2023, methanol poisoning at a Samsung supplier in Vietnam killed one worker, blinded at least 3 teenagers, and poisoned 33 others.<sup>142 143</sup> Samsung refused to take any responsibility. SHARPS noted that, <i>"Samsung has publicly stated that methanol is a substance that is restricted for use in its suppliers. However, despite these claims, no action was taken even after a victim was hospitalized in a coma. The family of the victim, who suspected the toxicity of the alcohol, sent it to the poison control center, revealing the problem."</i><sup>144 145</sup></p> <p>Samsung's onsite inspections are limited to a few high-risk suppliers. As a result, Samsung Electronics depends on its suppliers in Vietnam and elsewhere to evaluate themselves using an assessment tool that is based on the RBA criteria. If the supplier's self-assessment results are good, they will be <i>"given priority in supply volume allocation for the following year."</i><sup>146</sup> The reliance on self-evaluation invites answers that are not true. Samsung has further increased the motivation to cheat by offering even more business contracts to suppliers that have good self-evaluation scores.</p>
<p>States should ensure that foreign governments have access to all available health and safety information about hazardous substances and wastes that may be produced, released, used or transported abroad.</p>	<p>Please see information about the Industrial Technology Act above.</p> <p>The South Korean government strongly supports Samsung's corporate interests. In 2018, the South Korean Ministry of Foreign Affairs named Kim Do-hyun, a former Samsung mobile phone executive, ambassador to Vietnam where half of its mobile phones are produced globally.<sup>147</sup> In 2019, the Ministry dismissed Kim Do-hyun for violating the anti-graft law.<sup>148</sup></p>

## FRAMEWORK PRINCIPLES ON HUMAN RIGHTS AND THE ENVIRONMENT

At the UN General Assembly in 2018, the UN Special Rapporteur for the Environment presented framework principles on human rights and the environment.<sup>149</sup> Examples of gaps and actions that contradict this right are shown below.

UNSR ENVIRONMENT: FRAMEWORK PRINCIPLES ON HUMAN RIGHTS AND THE ENVIRONMENT	ISSUES
<p>States should respect, protect and fulfil human rights in order to ensure a safe, clean, healthy and sustainable environment.</p>	<p>In 2017, CGFED and IPEN raised concerns about working conditions based on testimonies from workers at Samsung mobile phone factories in Vietnam.<sup>150</sup> However, after Vietnamese authorities investigated the factories, they concluded that the company “<i>had basically followed all regulations on labour contracts, working environment, regular health check-ups, wages and bonuses.</i>”<sup>151</sup> This indicates regulators acquiesced to numerous EHS issues at the factories and were either not able or not willing to oversee Samsung’s EHS practices and publicly report them.</p>
<p>States should provide public access to environmental information by collecting and disseminating information and by providing affordable, effective and timely access to information to any person upon request.</p>	<p>Vietnam does not have specific regulations on people’s right to access information, nor does it clearly stipulate what information is allowed to be provided and what information cannot be provided. A lot of State information is marked “<i>Confidential</i>” but there is no reason why it is classified in this category. People often do not have access to comprehensive information about legal policy-making including the activities of State agencies; investment attraction policies and planning; orientation and economic development plans; and statistics on the local socio-economic situation.</p> <p>The lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that Samsung did not have to report chemical releases to the environment, keeping its extensive pollution hidden from the public and regulators. Currently, the company must report releases and transfers of more than 400 chemicals through South Korea’s PRTR system which is publicly accessible, but chooses not to do so in Vietnam.</p> <p>In Vietnam, a draft plan for a PRTR system was released in 2017.<sup>152 153</sup> Subsequently in 2020, PRTR elements were integrated into the Law on Environmental Protection.<sup>154</sup> Further modifications are described in Government Decree 08/2022/ND-CP which was issued in 2022.<sup>155</sup> As a local government’s initiative, the Department of Natural Resources and Environment of Binh Duong province worked with a company to 31 develop a pilot PRTR software for use in Binh Duong Province in the southeast part of the country which includes manufacturing from foreign investors such as Nike, Adidas, H&amp;M and McDonalds. However, there is no current information on the implementation of the software. The government reporting form for wastewater treatment emissions includes a list of 18 chemicals plus total organic compounds for input wastewater and a list of 22 chemicals for reporting in post-treatment of wastewater.<sup>156</sup> The Department of Natural Resources and Environment must publicize the list of production facilities performing environmental monitoring on their website. However, the authors could not find a list of these facilities on the Ministry’s website.</p> <p>For years, Samsung has blocked compensation of sick workers in South Korea by obstructing key information pertaining to chemical use and exposure of workers, claiming that it is confidential business information.<sup>157 158</sup></p>

	<p>In 2018, Samsung filed lawsuits against the South Korean Ministry of Employment and Labor to block the release of health and safety information about chemicals, claiming that it contained trade secrets.<sup>159</sup></p> <p><sup>160</sup> The same year, Samsung successfully requested the Ministry of Trade, Industry and Energy to designate the workplace environmental monitoring report as a national core technology. This designation elevated a report that provides health and safety information about chemical substances to the level of national security.<sup>161</sup></p> <p>In 2019, the National Assembly amended the Act on Prevention of Divulgence and Protection of Industrial Technology (Industrial Technology Act) to reflect Samsung’s positions.<sup>162</sup></p> <p>The new law quickly became known as the Samsung Protection Act. Key points that undermine the right to information include: Opaque decision-making by a secret committee; banning disclosure of information related to ‘the national core technology;’ conflicts with the Information Disclosure Act which ensures people’s right to know; vague scope which allows companies to claim all information is related to national core technology and therefore must be kept secret; confining the use of information with criminal punishment; and empowering an intelligence agency to act outside of judicial process.<sup>163</sup></p>
<p>To avoid undertaking or authorizing actions with environmental impacts that interfere with the full enjoyment of human rights, States should require the prior assessment of the possible environmental impacts of proposed projects and policies, including their potential effects on the enjoyment of human rights.</p>	<p>Samsung’s factory in Bac Ninh was built with no wastewater treatment plant and an undersized air pollution control facility.<sup>164 165 166</sup> A permit for operation with these severe oversights would not be granted in South Korea, but in Vietnam the company not only started production but continued releasing untreated air pollution for seven years and toxic wastewater dumping for three years.<sup>167</sup></p>
<p>States should provide for and facilitate public participation in decision-making related to the environment, and take the views of the public into account in the decision-making process.</p>	<p>The right of the people to participate in state management and develop policies and laws in Vietnam has been affirmed in Article 28 of the 2013 Constitution. Accordingly, <i>“Citizens have the right to participate in State and social management, participate in discussions and recommendations with State agencies on grassroots, local and national issues; The State creates conditions for citizens to participate in state and social management; The State needs to be open and transparent in receiving and responding to citizens’ opinions and recommendations.”</i></p> <p>However, the legal provisions on the mechanism for exercising rights are not favorable for people to practically exercise this right. For example, point d, clause 2, Article 24 of the Law on Access to Information 2016 stipulates that the requester must provide the reason and purpose of providing information. However, since whistleblower and other security protections are inadequate, the person providing the information will face a risk of being outed publicly. This has the effect of limiting provision of information.</p> <p>Regulations on participating in comments and criticism on draft policies and laws are not complete, especially the content on methods of collecting comments. For example, an environmental impact assessment report needs to get opinions from local people. However, the implementation of consultation is not transparently monitored and the selection of citizen representatives is often not representative of specific interested communities.</p> <p>Vietnamese law stipulates that all State policies must publicly seek people’s opinions. Openness without transparency is the opinion of many experts about the way to get opinions on legal documents of many Vietnamese State agencies.<sup>168</sup> Many comments and feedback on documents and policies from people and social organizations to State agencies seem to fall into silence. No response, no explanation, no argument, no criticism is received as feedback from the agency itself. This is often a way of soliciting opinions to complete procedures, appearing to be demanding but not achieving the desired goal of legal documents needing to reflect and fully consider different viewpoints in society.</p>

<p>States should establish and maintain substantive environmental standards that are non-discriminatory, non-retrogressive and otherwise respect, protect and fulfil human rights.</p>	<p>In recent years, the Vietnamese government has repeatedly affirmed the importance of sustainable development and environmental protection. The 2020 Environmental Protection Law is considered to mark a new step forward in meeting the practical requirements of sustainable development to harmonize socio-economic development with environmental protection. However, in practice, environmental management is considered to have many limitations, due to the lack of uniformity, lack of feasibility, and lack of predictability in the legal document system. Legal regulations on environmental protection reveal inadequacies, overlaps, and conflicts between ministries and branches related to their functions. Many documents lack synchronization and detail. In addition, circulars and legal documents often only apply for a short period of time and cannot keep up with the actual developments of the acts they regulate. This limits the effectiveness of behavioral adjustment on environmental protection.</p>
<p>States should ensure the effective enforcement of their environmental standards against public and private actors.</p>	<p>According to statistics from the Ministry of Justice, Vietnam currently has about 300 legal documents regulating the behavior of individuals, organizations, and socio-economic activities on environmental protection. Despite these numerous regulatory documents, due to the goal of maximizing profits, many businesses are willing to violate laws on environmental protection, causing environmental degradation and pollution, and resource depletion. According to statistics, 65% of industrial parks in the country have come into operation, but have not been granted a certificate of completion of environmental protection works and 10.7% of industrial parks have not yet built a centralized wastewater treatment system.</p> <p>Before 2013, human rights issues in environment matters were not recognized in the Constitution or in Vietnamese legal documents. The 2014 Law on Environmental Protection recognized human rights in the environment for the first time in Clause 2, Article 4 and the 2020 Law on Environmental Protection, recorded in Clause 3, Article 4.</p> <p>Analysis of regulations related to the right to access environmental information in legal and sub-legal documents shows that there are still many inadequacies in the implementation mechanism and process.</p> <p>First, due to the unique nature of environmental information, the Ministry of Public Security has issued a Circular stipulating the List of classified state secrets in the field of natural resources and environment.</p> <p>Second, for exempted information, the law does not have regulations on considering the “<i>public interest</i>” of whether this information is confidential or made public at the request of state agencies and other agencies. The agency responsible for overseeing the implementation of the Law must balance this public interest.</p> <p>Third, regulations on the types of information that must be disclosed and the forms of disclosure and the organizations responsible for providing this information are scattered in many different legal documents, causing difficulties and timeconsuming work for people who need to access information.</p> <p>The right to request environmental information is also not clearly stipulated in legal documents.</p>
<p>States should respect, protect and fulfill human rights in the actions they take to address environmental challenges and pursue sustainable development.</p>	<p>Vietnam needs to have an overall, comprehensive, and long-term vision in policy making on resource management and environmental protection. Vietnam needs to consolidate the state management apparatus for the environment, especially at the provincial, district, commune, and local levels. There is a proposal to establish a specialized Committee on Human Rights of the National Assembly to supervise and manage specialized state management agencies in ensuring human rights in general, including environmental human rights. Vietnam should expand the role of the public and communities in control of environmental pollution and promote social supervision of environmental protection activities. The law needs to specifically regulate the types of environmental information that must be widely disclosed and forms of disclosure.</p>

States should respect and protect the rights to freedom of expression, association and peaceful assembly in relation to environmental matters.	Independent trade unions are illegal in Vietnam. In Vietnam, Samsung has actively lobbied against country ratification of ILO Conventions 87 and 98. <sup>169 170</sup> Vietnam has not yet ratified ILO Convention 87, “ <i>Freedom of Association and of the Right to Organize Convention.</i> ” <sup>171</sup>
States should provide a safe and enabling environment in which individuals, groups and organs of society that work on human rights or environmental issues can operate free from threats, harassment, intimidation and violence.	A UN Special Rapporteurs’ statement on Vietnam from Mr. Baskut Tuncak, Ms. Anita Ramasastry, and Mr. David Kaye expresses concern about women workers in Vietnam. “ <i>While an assessment of the findings of the report requires a response by the competent authorities, it is unacceptable that researchers or workers reporting on what they consider to be unhealthy and inadequate working conditions are intimidated by private or public officials.</i> ” <sup>172</sup>

## PRINCIPLES TO RESPECT AND PROTECT WORKERS FROM TOXIC OCCUPATIONAL EXPOSURES

In 2019 at the UN General Assembly, the UN Special Rapporteur for Toxics and Human Rights presented 15 principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights.<sup>173</sup> Examples of how Samsung’s operations have violated these principles are shown below.

### Examples of how Samsung Electronics’ operations compare with principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights

UNSR HUMAN RIGHTS AND TOXICS: 15 PRINCIPLES TO RESPECT AND PROTECT WORKERS FROM TOXIC OCCUPATIONAL EXPOSURES AND TO PROVIDE REMEDIES FOR VIOLATIONS OF RIGHTS	ISSUES
Business enterprises have a responsibility to prevent occupational exposures to toxic substances.	<p>Samsung’s Bac Ninh factory lacked local exhaust systems in areas where toxic chemicals were used, so workers were routinely exposed to toxic chemical fumes.<sup>174</sup></p> <p>At the Ho Chi Minh City factory, chemical leaks from production were left to contaminate the factory floor.<sup>175</sup></p> <p>At the Bac Ninh factory, waste chemicals were piling up on top of the containers, leaking out of them and contaminating the floor of the storage area. No leakage prevention barriers were present.<sup>176</sup></p>
Duties and responsibilities to prevent the exposure of workers to toxic substances extend beyond borders.	Health and safety issues at Samsung’s factories in Vietnam could violate South Korea’s Industrial Health and Safety Act and Chemicals Control Act. These include: use of toxic chemicals without adequate shielding, ventilation, or air protection facilities; improper handling of hazardous chemicals and waste disposal; etc. <sup>177</sup>
Every worker has the right to know, including to know their rights.	<p>Samsung’s internal investigations revealed that chemicals were often labeled in Japanese or English — not Vietnamese — so that workers did not know what substance they were using.<sup>178</sup></p> <p>Interviews with women workers at Samsung factories in Vietnam in 2017 noted that mobile phone assembly workers did not receive training on chemical safety.<sup>179</sup></p>
Health and safety information about toxic substances must never be confidential.	No information on chemicals used or about emissions from Samsung factories or their suppliers in Vietnam has been publicly reported.

<p>The right to safe and healthy work is inseparable from freedom of association, the right to organize and the right to collective bargaining.</p>	<p>Independent trade unions are illegal in Vietnam. In Vietnam, Samsung has actively lobbied against country ratification of ILO Conventions 87 and 98.<sup>180 181</sup> Vietnam has not yet ratified ILO Convention 87, <i>“Freedom of Association and Protection of the Right to Organize Convention.”</i><sup>182</sup></p> <p>In 2021, the South Korean Supreme Court upheld the convictions of Samsung Electronics Vice President, Kang Kyung-hoon, Choi Pyeong-seok, Executive Director of Samsung Electronics Service, and Park Sang-bum, CEO of Samsung Electronics Service, for actively planning and leading the disruption of trade union activities.<sup>183 184 185</sup> The court also convicted most of the 30 employees who went on trial with them, finding that Samsung <i>“had engaged in a group-wide union-busting campaign.”</i><sup>186</sup></p> <p>In Indonesia, Samsung destroyed the first overseas trade union in approximately 40 days which was described as systematic <i>“threats, persuasion, surveillance and violence.”</i><sup>187</sup> These are typical methods used in South Korea, based on company guidelines.<sup>188</sup></p> <p>In India, it appears that Samsung’s efforts to undermine trade unions included company personnel impersonating government authorities.<sup>189</sup></p> <p>In Germany, Samsung obstructed the formation of an employee council by firing the workers who established it. Samsung was taken to the German Labor Court, which ruled to <i>“ensure the formation of the council.”</i><sup>191</sup></p> <p>Other Samsung efforts to destroy trade unions occurred in Hungary and Malaysia.<sup>192</sup></p>
<p>Workers, representatives of workers, whistle-blowers and rights defenders must all be protected from intimidation, threats and other forms of reprisals.</p>	<p>A UN Special Rapporteurs’ statement on Vietnam from Mr. Baskut Tuncak, Ms. Anita Ramasastry, and Mr. David Kaye expresses concern about women workers in Vietnam. <i>“While an assessment of the findings of the report requires a response by the competent authorities, it is unacceptable that researchers or workers reporting on what they consider to be unhealthy and inadequate working conditions are intimidated by private or public officials.”</i><sup>193</sup></p>

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## PHOTOGRAPHY

Page 70 credit: Samsung whistleblower

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## CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

This report provides nine key insights into Vietnam's electronics industry by examining Samsung Electronics, its dominant foreign investor. The true nature and consequences of Samsung's management approach in Vietnam come from internal information provided by a former manager of environmental health and safety (EHS). This report comes at a time when Vietnam is pushing to further develop its electronics industry and become a semiconductor manufacturing hub. South Korea's grim experience with the electronics industry and the reality of how Samsung has operated in Vietnam should play an important role in developing and implementing policy measures to protect human health and the environment and ensure the full realization of human rights.

### **Vietnam's regulatory infrastructure makes it vulnerable to pollution from the electronics industry.**

Information about environmental impacts and occupational health in the Vietnamese electronics industry is lacking but very important due to the industry's rapid growth, large factory operations, and status as the one of the country's largest employers.<sup>123</sup> However, the primary legal document shaping the government's policy approach to the sector fails to mention environmental protection, working conditions, or measures to protect communities and worker health and safety.<sup>4</sup> The public does not have information about chemical releases from factories or the results of regulatory agency investigations. Some efforts have been made to establish a pollutant release and transfer registry system, but it covers only a small number of chemicals and the data is not publicly accessible.<sup>5</sup>

**Poor management runs like a thread through Samsung operations in Vietnam in ways that would not be permitted in South Korea where it is headquartered.**<sup>6</sup> The company started factory operations in Vietnam even though there was no wastewater handling system for toxic production wastes.<sup>7</sup> Quietly, Samsung illegally dumped production wastewater containing toxic chemicals into the environment for three years.<sup>8910</sup> Improper design and operation of air pollution control systems resulted in severe air pollution.<sup>111213</sup> After seven years of polluting the surrounding community, Samsung outsourced the most toxic manufacturing processes to its suppliers — companies that generally have even less capacity and awareness of environmental health and safety than Samsung.<sup>1415</sup> This company decision has continued air pollution and health impacts in other communities to the present day.<sup>1617</sup> The company's careless approach to waste management raises concerns considering that in at least one province it is a major generator of hazardous wastes.<sup>18</sup> Emissions from Samsung factories and their suppliers in Vietnam are not publicly reported. In contrast, at home, Samsung Electronics' emissions are publicly available because the company must report releases and transfers of more than 400 substances to air, land, water, and wastes through South Korea's pollutant release and transfer registry (PRTR) system.<sup>19</sup> Samsung took advantage of the fact that Vietnam did not have a PRTR system and hid its air pollution and toxic wastewater dumping from regulators and the public.

**Samsung's lax management of its suppliers results in pollution and undermines worker safety.** The company claims responsible management of its suppliers but its investigations show numerous compliance violations including poor management of air pollution control facilities; discharge of raw sewage and toxic wastewater directly into the environment; oil and chemical leaks; and improper waste management.<sup>2021</sup> Samsung suppliers are evaluated against a code of conduct that the company based on criteria developed by the Responsible Business Alliance (RBA).<sup>22</sup> However, Samsung has significantly weakened the RBA code by deleting or editing its requirements to reduce workers' rights and safety and grant the company more authority.<sup>23</sup> Samsung's supplier management system also opens the door to cheating by depending on suppliers to self-report their use and management of toxic chemicals and rewards them with more contracts if they self-report a good score.<sup>24</sup> If suppliers violate company environmental health and safety policies or government regulations, it does not affect their business contracts with Samsung which continue as usual.<sup>25</sup>

**Samsung uses environmental health and safety (EHS) inspections to monitor operations and cover up their problems.** The roles of Samsung's individual factory EHS teams and the Global EHS Center appear to be quite different. The understaffed EHS teams at factories in Vietnam try to ensure compliance with company and regulatory standards, but they do not have the capacity to inspect Samsung factory operations plus all supplier factories each year. In contrast, the Global EHS Center at Samsung's headquarters oversees

EHS issues across Samsung Electronics and generates data for the company's sustainability reports, which publicly provide information on Samsung's EHS management practices. Surprisingly, the Global EHS Center gave the company's Bac Ninh factory a top score for compliance during a routine comprehensive EHS inspection, while knowing about its severe pollution problems. This indicates that the aim of Samsung's Global EHS Center's routine inspections is not to find problems but to report perfect compliance results for public consumption, even if it means covering up problems.<sup>26</sup>

**The company's sustainability reports hide the reality revealed by EHS inspections.** To preserve and enhance its image externally, Samsung Electronics' sustainability reports provide the public, investors, journalists, and others an alternative to the reality of the company's operations as revealed by their own investigations. These include public claims about optimal air pollution prevention facilities while their internal inspections showed that the Bac Ninh plant severely polluted the surrounding community.<sup>27 28</sup> The company made public claims about processing wastewater to remove pollutants even though at the time the Bac Ninh factory did not even have a wastewater treatment facility for toxic production wastes and for three years just dumped them into the environment.<sup>29 30 31 32</sup> Samsung's sustainability reports have mentioned positive findings of third-party audits of their suppliers in Vietnam but have hidden nearly 13,000 compliance violations at its suppliers as identified by the company's own internal investigations over a four-year period.<sup>33 34 35</sup> The 2023 Sustainability Report mentions a notice of a corrective action by regulators in response to a wastewater spill at the company's semiconductor plant in Texas, but hides the fact that the company released nearly 3 million liters of toxic wastewater into a river tributary over a period of more than three months, killing all aquatic life.<sup>236 37 38</sup> Samsung's culture of secrecy conceals company problems both externally and internally and paves the way for denial when problems appear. This deeply ingrained management approach makes resolving environmental health and safety problems extremely difficult.

**Samsung's irresponsible chemicals management in Vietnam is a current, ongoing issue.** When Samsung outsourced harmful, toxic processes to its suppliers, it effectively moved serious air pollution problems to other communities where they still continue.<sup>39 40 41</sup> In 2023, Newstapa journalists measured high PM2.5 levels outside Samsung supplier factories.<sup>42</sup> Vietnamese media has described how a Samsung supplier has been discharging severe air pollution and dust all day and night. The surrounding community suffers from respiratory problems and a public health official noted increasing numbers of patients with throat and respiratory tract cancers.<sup>43</sup> Samsung claims to responsibly manage toxic chemical use at its factories and suppliers including restricting the use of methanol and other substances.<sup>44 45</sup> However, methanol is one of only 25 substances that Samsung Electronics partially regulates.<sup>46</sup> The company only completely prohibits two substances: benzene and n-hexane. Only certain uses of the other 23 chemicals are restricted. Even this weak regulatory scheme does not work properly. In 2023, 37 workers at a Samsung supplier were poisoned with methanol because of its use for prohibited purposes.<sup>47 48</sup> One worker died and at least three teenage workers lost their sight. Both Samsung and the supplier ignored poisoning symptoms in workers for weeks and it was actually the family of a worker who was hospitalized in a coma who discovered the cause of the poisoning.<sup>49</sup> Samsung refused to take any responsibility. The company's weak chemical policy is further undermined by Samsung's dependence on self-evaluation by suppliers which allows them to obtain a good score by concealing use of banned chemicals.

**South Korea's experience with the electronics industry is highly relevant to Vietnam.**<sup>50</sup> Scientific studies have documented a variety of occupational hazards in the "regular-tech" South Korean electronics industry (i.e. not the high-tech semiconductor industry).<sup>51 52 53</sup> These impacts are not legacy issues and continue to occur.<sup>54 55</sup> For example, in 2023, seven workers were poisoned by chloroform at an electronic component manufacturer in the city of Icheon, prompting the Ministry of Employment and Labor to conduct special inspections of workplaces handling cleaning agents nationwide.<sup>56</sup> Scientific research in South Korea has also highlighted the seriousness of occupational cancer and rare diseases among workers in the high-tech electronics industry, including Samsung.<sup>57 58 59 60 61 62 63 64 65</sup> The environmental pollution experience of the electronics industry in South Korea is also relevant to Vietnam. For example, the city of Gumi is a major "regular-tech" electronics manufacturing hub in South Korea with more than 1,700 companies including a Samsung mobile phone manufacturing plant. A 2015 study examining toxic volatile organic compounds (VOCs) in city air found toxic chemicals used in the electronics industry to be "ubiquitous."<sup>66</sup> As the high-tech electronics industry expands in South Korea, its projected environmental impact also increases. In Pyeongtaek,

approximately one million tons of wastewater from chip factories (including Samsung) will be released into public waterways by 2030.<sup>67</sup>

**Samsung Electronics' consistent pattern of externalizing the costs of pollution from mobile phone and appliance production onto Vietnam's communities, environment and workers violates human rights.**<sup>68</sup> This includes the human right to a clean, healthy, and sustainable environment;<sup>69 70 71</sup> children's right to live in a clean, healthy, and sustainable environment;<sup>72 73</sup> the right to a safe and healthy working environment;<sup>74 75</sup> and the UN Guiding Principles on Business and Human Rights.<sup>76 77 78 79 80</sup> In addition, Samsung's operations and government responses are not consistent with human rights principles outlined in UN Special Rapporteur reports. These principles include the right to information;<sup>81 82 83</sup> framework principles on human rights and the environment;<sup>84 85 86</sup> and principles to respect and protect workers from toxic occupational exposures.<sup>87 88 89 90</sup> In South Korea, lawmakers proposed the Corporate Human Rights and Environmental Protection Act in 2023.<sup>91</sup> The law stipulates requirements for corporate human rights and environmental due diligence, including in global supply chains, but unfortunately, it has not yet been passed.<sup>92</sup>

**Whistleblowers are important but EHS systems should not depend on them.** The detailed insights into the operations of Samsung Electronics in Vietnam described in this report only emerged due to a whistleblower with decades of company experience and deep knowledge of EHS issues. Whistleblowers play an extremely important role in reforming harmful or illegal company actions and they should be protected from threats or retaliation. Ultimately, protection of human rights, human health, and the environment should not have to rely on the bravery of whistleblowers but instead result from government actions to formulate and implement rigorous regulations and a company management approach that fulfills human rights obligations and applies the most protective standards of worker and environmental protection worldwide in a company's factories and suppliers.

## MAIN FINDINGS

Key findings from this study include:

1. Samsung built the Bac Ninh mobile phone plant with an undersized air pollution control facility that could not handle the factory's production capacity. As a result, the factory released untreated chemical-containing air pollution for approximately seven years.
2. For three years of operation, Samsung's Bac Ninh plant did not have a wastewater treatment facility to treat toxic chemical-containing production wastes and they were quietly illegally dumped into the environment.
3. The Bac Ninh factory lacked local exhaust systems in areas where toxic chemicals were used, so workers were routinely exposed to toxic chemical fumes.
4. Samsung's top-level management at headquarters was informed about severe air and water pollution at the company's Bac Ninh plant in Vietnam but remained silent.
5. Government regulators in Vietnam granted approvals to Samsung's Bac Ninh factory despite the undersized capacity of the air pollution control facility and the complete absence of wastewater treatment facilities for toxic production wastes. Lack of laws requiring public reporting of emissions or payments for remediation allowed Samsung to hide its extensive pollution and avoid remediation costs.
6. Samsung's Global Environmental Health and Safety (EHS) Center at company headquarters conducted a special inspection of the Bac Ninh factory and found a wide range of violations of company policy, including air pollution, water pollution, and unsound waste management. However, in its routine reports, it gave top marks to the facility for air pollution control and wastewater treatment. This contradiction suggests that the role of the Global EHS Center is to give the appearance of good factory management while ignoring problems revealed by Samsung's own inspections.
7. Instead of upgrading its undersized air pollution control facility at the Bac Ninh plant, Samsung outsourced its most toxic operations to its suppliers in 2017. This transferred severe air pollution problems to other communities that are currently ongoing.
8. Externally, Samsung claims responsible management of its suppliers, but the company has failed to adequately manage EHS problems in its supply chain. Over a four-year period, Samsung's internal

investigations found more than 13,000 compliance violations at its suppliers' factories with hundreds of compliance violations each quarter based on standards designed by the electronics industry. Non-compliance issues include air pollution, water pollution, and inadequate waste management. When presented with documentation of these issues, the company continued contracts with non-compliant suppliers. Samsung's supplier management system also opens the door to cheating by depending on suppliers to self-report their use and management of toxic chemicals and rewarding them with more contracts if they self-report a good score.

9. In 2018, Samsung's Thai Nguyen mobile phone factory generated 90% of all hazardous wastes in the province, despite the presence of many companies with polluting manufacturing processes such as cement, chemicals, electronics, plastics, and steel.
10. Samsung's EHS investigations at the Bac Ninh plant in 2012 found rampant air and water pollution, overflowing raw sewage, unsound management of wastes, and dangerous working conditions. However, the company's 2013 Sustainability Report which reported on actions in 2012, claimed that, "...environmental incidents are prevented at the source;" that "optimal prevention facilities" dealt with air pollution; and that production wastewater was only discharged "after processing it at internal processing facilities." The Bac Ninh factory did not even have a wastewater treatment facility for three years of operation and just dumped toxic wastewater directly into the environment.
11. The 2022 Sustainability Report which reported on actions in 2021, claims that all chemicals "are stringently controlled" and that "all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems." However, in 2021, Samsung's Ho Chi Minh Plant EHS Group documented violations of company policies at its appliance factory in Ho Chi Minh City including discharge of toxic wastes from the polyurethane insulation process into storm drains without treatment; waste chemicals leaking from a storage tank into the environment, and chemicals leaking inside the factory, posing a danger to workers.
12. Samsung has operated in Vietnam using double standards by ignoring measures they must routinely follow in South Korea. The lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that Samsung could keep extensive pollution hidden from regulators and the public. In contrast, emissions of more than 400 substances from Samsung Electronics' factories in South Korea are publicly reported through the country's PRTR system. The company refused to report emissions in Vietnam, while doing so in South Korea.
13. Samsung's human rights violations in Vietnam include the right to a clean, healthy, and sustainable environment; children's right to live in a clean, healthy, and sustainable environment; the right to a safe and healthy working environment; and the UN Guiding Principles on Business and Human Rights. Samsung's operations and government responses are not consistent with human rights principles outlined in UN Special Rapporteur reports including the right to information; framework principles on human rights and the environment; and principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights.
14. Samsung claims full compliance with Vietnamese laws but its internal investigations show violations of legal and company standards and human rights obligations. In South Korea, lawmakers proposed the Corporate Human Rights and Environmental Protection Act in 2023. The law stipulates requirements for corporate human rights and environmental due diligence, including in global supply chains, but unfortunately, it has not yet been passed.

## RECOMMENDATIONS

Communities and workers in Vietnam have the right to a clean, healthy, and sustainable environment. Based on the findings revealed in internal Samsung investigations, the research team has the following recommendations:

1. Samsung should report pollutant release and transfer registry (PRTR) data showing emissions and transfers to air, land, water, and wastes from Samsung facilities in Vietnam on a publicly available website in Vietnamese. At the very least, Samsung should report releases and transfers for all the

- substances the company is required to report in South Korea. The company should do this globally and report in the national language of each country. The company should require and support all its local suppliers globally to publicly report PRTR data.
2. Vietnam should further develop its PRTR system to require reporting from the electronics industry; expand the number of targeted substances at least to South Korean levels; and make the data freely available to the public in a timely manner on the internet.
  3. The Inspectorate Department of the Ministry of Labour, Invalids and Social Affairs (MOLISA) in Vietnam should make all company inspection reports publicly available on their website. Currently, file names appear but affected communities and workers cannot access them because they are not downloadable or empty.
  4. Vietnam should increase the rigor of its permit approval and oversight processes before manufacturers start or expand operations to prevent pollution caused by companies.
  5. To help internalize the costs of pollution, Vietnam should develop and implement a ‘polluter pays’ regulation requiring companies to pay into a fund for monitoring and cleanup of pollution so that these costs are borne by companies, not taxpayers in Vietnam.
  6. Samsung should incorporate the violations uncovered by public reporting or internal investigations into its sustainability reports so that they accurately reflect EHS challenges and company commitments to address them and not just function as positive image-building public relations documents.
  7. To ensure compliance with company and regulatory standards, Samsung should increase environmental health and safety staff in Vietnam to permit rigorous periodic inspection of its factories and all suppliers.
  8. Samsung should overhaul its superficial supplier management system to address compliance issues by adopting a worker-driven social responsibility mechanism in which worker organizations drive monitoring and enforcement and the company is legally required to provide financial support to suppliers to meet environmental and labor standards.
  9. To make the Samsung Supplier Code of Conduct meaningful, violations of the Code should result in stronger measures such as Samsung suspending or terminating contracts with the supplier, not ignoring infractions as is the current practice.
  10. South Korea should pass and fully implement a rigorous Corporate Human Rights and Environmental Due Diligence Act. This proposed law is designed to prevent human rights and environmental violations in companies’ global supply chains, including Samsung.
  11. The South Korean National Assembly should amend relevant existing laws to provide for criminal prosecution of violations that companies commit both domestically and internationally, including environmental pollution and non-compliance with occupational safety and health measures.
  12. Investors, fund managers, insurance personnel, and bank officers should take Samsung Electronics’ poor environmental and occupational health and safety management of its factories and suppliers as revealed in the company’s internal investigations into account when making decisions regarding investments, insurance coverage, and loans.
  13. The Vietnam Consumer Protection Association and other consumer associations should take Samsung Electronics’ poor environmental and occupational health and safety management of its factories and suppliers as revealed in the company’s internal investigations into account when making recommendations regarding products.
  14. Whistleblowing is part of the human right to freedom of expression and the public’s right to know under the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights. Samsung, all other companies and institutions, and all governments should provide effective protection for whistleblowers from threats or retaliation.

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  - As part of the hiring process, all workers must be provided with a written employment agreement in their native language that contains a description of terms and conditions of employment
  - All overtime must be voluntary.
  - ... ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace
  - Emergency drills must be executed at least annually or as required by local law, whichever is more stringent.
  - Participants shall identify the environmental impacts and minimize adverse effects on the community, environment, and natural resources within their manufacturing operations, while safeguarding the health and safety of the public.
  - Workers must be given a safe environment to provide grievance and feedback without fear of reprisal or retaliation.
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70. As noted in Chapter 2, Samsung's Bac Ninh plant released untreated chemical-containing air pollution for approximately seven years. When upper management at headquarters in Seoul became aware of the problems, they responded with silence. Residents living nearby noted that they "had been tortured by the bad smells from the factory" and that the pollution caused coughing and sickness.
71. As noted in Chapter 2, Samsung operated its Bac Ninh plant for three years without a wastewater treatment facility to treat toxic chemical-containing production wastes. Instead of treating these wastes, they were secretly dumped into the environment.
72. UNICEF (2023) How many children are there in Vietnam? UNICEF Data <https://data.unicef.org/how-many/how-many-children-under-18-are-there-in-vietnam/>
73. Toxic factory production wastes released to air, land, and water by Samsung factories and suppliers are highly relevant to this Convention and its recently updated legal guidance. In addition, workers at the company's factories or suppliers who are injured or sickened can impact children at home.
74. As noted in Chapter 2, Samsung's internal investigations in Vietnam revealed that its factory in Bac Ninh lacked local exhaust systems to send polluted air from production processes to air pollution control facilities. This violated company standards and exposed workers to toxic chemicals in numerous production processes.
75. A Samsung investigation at the company's Ho Chi Minh factory showed oil spills and chemical leaks contaminating the factory floor, posing a danger to workers. Please see Chapter 2.
76. As noted in Chapter 2, raw sewage from Samsung Electronics' Bac Ninh factory overflowed into the environment illegally for approximately four years without purification.
77. 김세봄 (2023) Global Samsung's Dangerous Factory #4: Risk Transferred, *Newstapa* <https://newstapa.org/article/z5s-l>
78. Tin nóng (2022) Công ty SIT Vina ở Bắc Ninh xả khói khét lẹt ngày đêm, bụi bay trắng như tuyết, *VTC News* <https://vtc.vn/cong-ty-sit-vina-o-bac-ninh-xa-khoi-khet-let-ngay-dem-bui-bay-trang-nhu-tuyet-ar715458.html>
79. Thanh Ha - Duong Lieu (2023) 1 killed, dozens hospitalized due to methanol poisoning in northern Vietnam, *Tuoi Tre News* <https://tuoitrenews.vn/news/society/20230315/1-killed-dozens-hospitalized-due-to-methanol-poisoning-in-northern-vietnam/72109.html>
80. 김지환 (2023) 삼성전자 베트남 협력사에서 메탄올 중독...“현지 공안 ‘납품사기’ 수사”, *경향신문* <https://m.khan.co.kr/national/labor/article/202303231743001>
81. United Nations (2015) Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Başkut Tuncak, A/HRC/30/40 <https://digitallibrary.un.org/record/800897?ln=en>
82. As noted in Chapter 4, despite many recommendations from domestic and foreign human rights organizations, Vietnam has not yet established a specialized human rights committee of the National Assembly to supervise specialized state management agencies and ensure human rights in general, including environmental human rights.
83. As noted in Chapter 4, the Vietnamese public has learned about environmental violations of Samsung and its suppliers through media agencies when incidents occur. Information released by the media is limited to describing the basic outlines of the incident. The public does not have information about chemical releases, or the next steps such as the investigation agency's conclusions, penalty decisions, etc.
84. United Nations (2015) Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Başkut Tuncak, A/HRC/30/40 <https://digitallibrary.un.org/record/800897?ln=en>
85. As noted in Chapter 4, the lack of a pollutant release and transfer registry (PRTR) system in Vietnam meant that over many years, Samsung did not have to report chemical releases to the environment, keeping the extensive pollution hidden from the public and regulators. The company did (and does) have to report releases of more than 400 chemicals through South Korea's PRTR system, but chose not to do so in Vietnam. Despite government efforts to establish an initial PRTR system, there is no public reporting of chemicals released by Samsung or any other company in Vietnam.
86. As noted in Chapter 4, to this day, Vietnam still does not have specific legal regulations on the types of environmental information that must be widely disclosed according to authority and form of disclosure.

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88. Please see Chapter 2; Personal communication and photos from the Samsung whistleblower
89. CGFED and IPEN (2017) Stories of Women Workers in Vietnam's Electronics Industry, CGFED and IPEN <https://ipen.org/documents/electronics-workers-vietnamese-women-report>
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91. 허인 (2023) 정태호 의원, ‘기업인권환경보호법’ 발의 기자회견, 신아일보 <https://www.shinailbo.co.kr/news/articleView.html?idxno=1753839>
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# ANNEX 1. AN OVERVIEW OF THE ELECTRONICS INDUSTRY IN VIETNAM

## KEY POINTS IN THIS ANNEX

1. The electronics industry is being promoted as an integral part of a major development strategy for Vietnam at the country's highest political level.
2. Prime Minister Pham Minh Chinh has designated the expansion of chip and semiconductor production as a top priority for Vietnam's economic development.
3. Vietnam's action plan for development of the electronics industry fails to mention environmental protection, working conditions, or measures to protect worker safety.
4. The majority of the electronics industry workforce in Vietnam is made up of women working in assembly lines.
5. In 2022, Vietnam's electronics industry recorded an export turnover of USD\$114.4 billion, an increase of about 6% year-over-year, or more than 30% of the country's total export turnover.
6. In the period of 2016-2020, Vietnam's electronics exports increased at an annualized rate of 13.9%, making it the world's fastest.
7. During the first six months of 2022, phones and components exported by FDI enterprises made up 99.73% of the country's total exports in this category.
8. The Vietnam Chamber of Commerce and Industry notes that local companies play a minor role in supply chains.
9. A survey of 17 electronics companies by Vietnamese regulators turned up many violations of labor safety codes.
10. Despite the high chemical intensity of the electronics industry, to date there has been no in-depth independent research regarding the health of electronics workers.
11. Mandatory public reporting of emission data in Vietnam is weak and the electronics industry is viewed as a low pollution risk, despite its extensive use of chemicals.
12. Samsung currently operates six electronics production subsidiaries, a sales and marketing center, and a research center in Vietnam.
13. Samsung's large production operations in Thai Nguyen and Bac Ninh, were exempt from corporate income tax for the first four years of their operation, and following this initial period, they are subject to a corporate income tax rate of 10% for the subsequent 27 years. This is half the tax rate for Vietnamese companies.
14. The global minimum corporate tax, agreed to by nearly 140 countries in 2021 (including South Korea and Vietnam), threatens Vietnam's generous tax subsidies and is under pressure from Samsung and others. However, in November 2023, the parliament approved a corporate tax rate of 15% in line with the global agreement.
15. Samsung has actively lobbied against Vietnam's ratification of ILO conventions concerning the rights of workers to organize independent trade unions.
16. Samsung has also acted to undermine the right to organize trade unions in South Korea. In 2021, the South Korean Supreme Court upheld convictions of Kang Kyung-hoon, Samsung Electronics Vice President; Choi Pyeong-seok, Executive Director of Samsung Electronics Service; and Park Sang-bum, CEO of Samsung Electronics Service, for actively planning and leading the disruption of trade union activities.

## INTRODUCTION

The electronics industry occupies a key position in the Vietnamese economy. According to the Ministry of Industry and Trade, in 2022 the industry achieved an export turnover of USD\$114.4 billion, an increase of about 6% compared to 2021, accounting for more than 30% of the country's total export turnover.<sup>1</sup> According to the ILO, the total labor force of the electronics industry increased from 46,000 in 2005 to about 910,000 in 2020, of which approximately 60% are women working in assembly lines.<sup>2</sup>

## ELECTRONICS AS A DEVELOPMENT STRATEGY

Vietnam has welcomed the electronics industry at the highest political level. The decision of the Prime Minister No. 55/2007/QĐ - TTg dated 23 April 2007, confirmed that the electronics industry is one of the three key industries in the period of 2007-2020. Resolution No. 23-NQ/TW dated March 22, 2018 of the Central Committee, the supreme body of the Communist Party of Vietnam on Orientation Towards Formulation of National Industrial Development Policy by 2030 with a Vision to 2045, identified the development of the information technology and electronics industries as *“the main way, center and breakthrough respectively.”*<sup>3</sup>

Since January 1, 2007, after Vietnam became a full member of the World Trade Organization (WTO), government support and preferential treatment given to the electronics industry were removed as a condition of Vietnam’s accession to the WTO. Some Foreign Direct Investment (FDI) companies went bankrupt, stopped production, or moved to commerce and services. However, since Vietnam’s accession to the WTO, a new foreign investment wave has flowed into Vietnam, including major electronics industry investments from big companies such as Samsung Electronics (South Korea), Intel (USA), Nidec (Japan), Foxconn (Taiwan), Meikom (Japan), and Nokia (Finland). As noted by the Director General of the Information Technology Department at the Ministry of Information and Communications, *“Vietnam is considered a prestigious destination and a ‘construction site’ and highly appreciated by many investors worldwide, for having great potential for development.”*<sup>4</sup>

According to the Vietnam General Statistics Office, in 2013, for the first time, electronics exports surpassed the garment sector — a key industry in Vietnam.<sup>5</sup> The electronics industry currently retains its number one position.<sup>6</sup> In 2015, the Vietnamese electronics industry recorded a total revenue of USD\$46 billion, including telephones, computers, and other devices.<sup>7</sup> In 2016, the industry’s exports increased to USD\$53 billion, topping all other industries. In the period of 2016-2020, Vietnam’s electronics industry’s exports had the world’s highest average growth rate at 13.9%.<sup>8</sup> According to the General Statistics Office, total registered foreign investment capital in the electronics industry reached USD\$16.24 billion as of July 20, 2023, an increase of 4.5% over the same period last year.<sup>9</sup>

To further expand the electronics industry, Vietnam is pushing for the country to become a semiconductor manufacturing hub. Vietnam Prime Minister Pham Minh Chinh, *“affirmed that the expansion of the chip and semiconductor production is a priority in Vietnamese development strategy.”*<sup>10</sup> In 2022, President and Head of Mobile Experience of Samsung Electronics, Roh Tae-moon, met with Vietnam Prime Minister, Pham Minh Chinh, and announced the company’s plans to invest USD\$850 million to begin the manufacture of ball grid array electronic components for semiconductors in Vietnam in 2023.<sup>11 12 13</sup> After a meeting with Prime Minister Pham Minh Chinh, Amkor committed to building a new USD\$1.6 billion factory in Bac Ninh province.<sup>14</sup> In September 2023, US semiconductor makers met with Vietnamese government officials during US President Biden’s visit to the country. The US and Vietnam signed a partnership agreement that *“includes an agreement on semiconductors, with the United States committing to help Vietnam develop its capabilities and expand production”* as well as cooperation on rare earth minerals as Vietnam has the world’s second-largest deposits after China.<sup>15</sup> In October 2023, Hana Micron, a South Korean Samsung supplier, announced plans to invest USD\$1 billion in Vietnam chip production by 2025.<sup>16</sup> Tran Dang Hoa, Chair of FPT Semiconductor, predicted that, *“for the long-term, Vietnam would become a silicon valley of Southeast Asia.”*<sup>17</sup>

Although being considered a key industry, recording some achievements in attracting FDI, and playing a major role in exports, in fact, the Vietnamese electronics industry remains in the initial stage. The turnover of the entire hardware and electronics industry accounts for 90% of the information technology industry, but most of it is held by FDI companies and local companies only concentrate on assembly and trade services.

As noted by Vu Tien Loc, President of the Vietnam Chamber of Commerce and Industry (VCCI), *“Although the electronics industry is a symbol of integration, local companies are almost out of the supply chain... Companies can only supply carton boxes, bags and packing service.”*<sup>18</sup> Research by ILO points out that in 2016, 99 of the 100 largest electronics companies in Vietnam were FDI investments.<sup>19</sup> These foreign

companies dominate exports of certain electronic products. For example, according to the General Statistics Office, in the first 6 months of 2022, the export turnover of phones and components of FDI enterprises accounted for 99.73% of the total export turnover of phones and components of the country.<sup>20</sup>

## ENVIRONMENTAL IMPACT AND WORKING CONDITIONS

The environmental impact and working conditions in the electronics industry are especially important due to its large factory operations and status as one of the country's largest employers.<sup>21 22 23</sup> More than 2,500 companies employ approximately 910,000 workers.<sup>24</sup> However, the primary legal document shaping the government's policy approach to the sector fails to mention environmental protection, working conditions or measures to protect worker health and safety.

Decision No. 1290/QĐ-TTg of the Prime Minister on the Action Plan for Development of the Electronics Industry until 2020, with a Vision to 2030 calls for the following:

*“Review, amend and complete standards and technical regulations for manufacturing support of industrial products in the electronics industry. On this basis, develop regulations on application of standards and technical regulations in manufacturing in order to improve the quality and ensure the prestige of industrial products in the electronics industry in Vietnam.”*

The focus of this major policy document is rigorous standards for manufactured products. Standards and regulations to prevent the electronics industry's potential impact on human health and the environment are not mentioned.

A 2016 study by the Ministry of Labour, Invalids and Social Affairs (MOLISA) and ILO states that the majority of the workforce is made up of women that are, *“in the low segment of this industry... working in assembly lines which make little value added to the products. Women mostly do not hold technical or management positions. And senior management positions in the industry are held by foreigners.”*<sup>25</sup> This reinforces the need for attention to protecting women's health but in Vietnam no independent in-depth research studies exist on the effects of work in the electronics industry on workers' health. The large body of occupational health and safety data in other countries does not appear to be seriously considered as a warning sign in Vietnam.

An initial study by MOLISA inspectors at 17 electronic manufacturing and assembling companies across the country discovered many violations of labor safety codes.<sup>26</sup> The MOLISA study reports the use of alcohol detergent, corrosive detergent, and sulfuric acid. But public information about chemical use in the electronics industry is thin to nonexistent and only some companies have informed the government about cases of illnesses and injuries due to chemical exposure. MOLISA has noted the potential for serious health impacts of the electronics industry, but admits it lacks data: *“Problems relating to labour safety in the electronics industry can lead to cancer and cardiac arrests due to being exposed to chemicals, radiation and electronic waves ... But this is only an inference, without proving statistics, although there are real lead poisoning and occupational diseases.”*<sup>27</sup>

A research report published by the Centre for Development and Integration (CDI) asserted that, *“The working conditions of the electronics manufacturing and assembling industry can be considered hard and harmful and in some production stages of battery and microchip especially hard and harmful.”*<sup>28</sup> The research noted negative impacts of the electronics industry on workers such as immediate fatigue and adverse effects on reproductive health. The report also described an incident in which workers fainted en masse at Samsung's Bac Ninh plant in May 2012. The incident worried many workers and related competent authorities had to examine the occupational health and safety practices of the company's factories. In June 2013, a production workshop witnessed 6 miscarriages including a 7-month-old stillbirth, and a case of birth defects resulted in induced abortion. The study showed that many workers reportedly frequently suffered from osteoarthritis due to work posture, tinnitus, and declining vision.<sup>29</sup>

The MOLISA report noted that working and resting time violations were the most common, primarily because of production orders from management or other corporate stakeholders. Two of the 17 electronics companies mobilized overtime of more than 100 hours/month in peak months. Two other companies used 60 hours/month overtime and another nearly 50 hours/month.

The MOLISA study mentioned that excessive overtime is an important contributing factor to occupational accidents. *“Too much overtime is one of the main reasons leading to labour accidents in electronic companies.”*<sup>30</sup> The report also identified a lack of training on safety and occupational health, insufficient personal protective equipment, and failure by employers to apply solutions to improve working conditions as additional causes of accidents.

Vietnamese regulations do not permit more than 30 hours/month and 200 hours/year overtime. This indicates that, according to the government study, nearly one-third of the electronics companies it examined are violating laws governing overtime work. Worthy of note is that in production workshops, working time is strictly regulated under different forms. For example, at a telephone assembly factory, time is controlled to such an extent that workers have to request *“toilet cards”* to be able to go to the bathroom in order to maximize time on the production line.<sup>31</sup>

In many countries, companies are required to publicly report releases of hazardous chemicals to the environment through pollutant release and transfer registry (PRTR) systems. Around the world, PRTR systems play a crucial role in environmental governance by requiring transparency and accountability from polluters regarding end-of-pipe pollution discharge, safeguarding the public’s environmental right to know, and enabling media and civil society to supervise and advocate for discharge reductions, thus becoming key measures for controlling toxic and hazardous chemicals.<sup>32</sup>

In Vietnam, PRTR policy is developing much more slowly than industry emissions. This results in double standards for the large foreign electronics companies operating in Vietnam. For example, at its factories in South Korea, Samsung Electronics is required to report emissions and transfers of more than 400 substances to air, land, water, and wastes thru the country’s PRTR system, which makes the data publicly available.<sup>33</sup> In contrast, in Vietnam the government reporting form for wastewater treatment emissions lists only 18 chemicals plus total organic compounds for input wastewater and includes a list of 22 chemicals for reporting in post-treatment of wastewater.<sup>34</sup> The reporting form for incinerators limits reporting to dioxins / furans and mercury.<sup>35</sup>

In addition, the electronics industry does not appear to be viewed as a potential major environmental polluter in Vietnam, though that is the experience in countries with mature electronics industries, such as South Korea. Annex 1, Part 2 of Government Decree 08/2022/ND-CP contains a list of industries that could cause environmental pollution. The list has three levels of severity and despite the high chemical intensity of the industry, the last entry of the lowest level of pollution risk is *“Manufacture of components, electrical and electronic equipment.”*<sup>36</sup>

In contrast to its governmental designation as a low pollution risk, Samsung Electronics acknowledged generating 481,436 tons of hazardous waste and 136,118 tons of chemical-containing wastewater in 2022.<sup>37</sup> A significant proportion of these wastes were likely generated in Vietnam because the country is home to Samsung’s second-largest production base after South Korea. This is evidenced by the fact that approximately 80,000 - 100,000 of Samsung’s 270,372 employees worldwide are Vietnamese workers.<sup>38 39 40</sup> In addition, Vietnamese government data from Thai Nguyen province indicates that in 2018, Samsung’s Thai Nguyen factory generated 124,000 tons or 90% of all hazardous wastes in the province, despite the presence of many companies manufacturing products known to be highly polluting.<sup>41</sup>

Taken together, these data along with the other information in this report indicate that the potential impact of the electronics industry on the environment is underestimated in Vietnam.

Despite concerns about the electronics industry justified by information that exists in other countries, such as South Korea, the lack of awareness in Vietnam has created a good image for the industry. Much of the Vietnamese public believes that the electronics industry has less risks and is a *“clean industry”* due

to its air-conditioned environment which is perceived to be identical to an ideal and safe environment. There is a lack of awareness about the risks of chemical exposures in electronics production or its environmental impact. Few people realize the reality that, “*clean here is in regard to products not workers.*”<sup>42</sup>

## SAMSUNG’S OPERATIONS IN VIETNAM

Samsung operates six electronics-related production subsidiaries, a sales and marketing center, and a research center in Vietnam.<sup>43</sup> In 2022, Samsung opened a USD\$220 million research and development center in Hanoi, the largest Samsung R&D center in Southeast Asia.<sup>44</sup>

### Samsung Electronics Operations in Vietnam

SAMSUNG SUBSIDIARY	PRODUCTS / ACTIVITIES	LOCATION
Samsung Display Vietnam	LCD panels and displays	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Electronics Ho Chi Minh City CE Complex (SEHC)	Home and office appliances including TVs, refrigerators, air conditioners, printers, washing machines, vacuum cleaners, and monitors	Ho Chi Min City High Technology Zone
Samsung Electronics Vietnam	Mobile phones and parts	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Electronics Vietnam Thai Nguyen	Mobile phones and parts	Yen Binh Industrial Zone, Thai Nguyen Province
Samsung Electro-Mechanics	Printed circuit boards, other electronic phone components, camera modules	Yen Binh Industrial Zone, Thai Nguyen Province
Samsung SDI	Mobile phone battery assembly	Yen Phong Industrial Zone, Bac Ninh Province
Samsung Mobile Research and Development Center	Research center including smart devices, network technology, software	Hanoi
Samsung Vina Electronics (SAVINA)	Sales and marketing office	Ho Chi Min City

## SAMSUNG HAS PAID HALF THE CORPORATE INCOME TAX RATE OF VIETNAMESE COMPANIES

Despite the substantial turnover Samsung generates in Vietnam, as a foreign direct investor the company has received significant tax incentives. Former General Director of Samsung Vietnam, Shim Won Hwan, justified these economic incentives, noting that, “*Without incentives, our products will lose in the competition against other rivals.*”<sup>45</sup> Ironically, foreign investors such as Samsung contribute far less in tax payments than domestic companies, despite their large turnover. As noted by the Director of Vietnam’s General Statistics Office, Pham Dinh Thuy, “*The FDI sector earns a large profit, more than the other economic sectors, including State-owned and private enterprises, but its contribution to the State budget is lower.*”<sup>46</sup>

In Samsung’s case, the large Thai Nguyen and Bac Ninh factories were exempt from corporate income tax for the first four years of operation and only pay 10% in corporate income tax for the following 27 years.<sup>47</sup> This is half the tax obligation of Vietnamese companies (20%). In addition, hi-tech companies such as Samsung are exempt from import taxes on raw materials, spare parts, and components. In 2014, when the company

expanded its Thai Nguyen plant, the provincial government extended the 50% exemption on corporate income tax and a 50% exemption on the land fee rental in the Yen Binh Industrial Park.<sup>48</sup> These exemptions were in addition to full tax exemptions for the first four years of operation and a 50% exemption for the following nine years.

In 2019, Samsung pressured Vietnam to revise its tax incentive eligibility to include the expansion of current facilities. The company warned Vietnam's authorities, *"that it may have expanded investment in other countries if the government had declined to grant incentives for the expansion investment."*<sup>49</sup> The Minister of Planning and Investment, Bui Quang Vinh, supported the company's proposal to revise the Law on Corporate Income Tax.

## SAMSUNG PRESSURES VIETNAM ON THE GLOBAL MINIMUM TAX

In 2021, 136 countries including Vietnam and South Korea agreed to new cross-border tax rules which take effect in 2024.<sup>50</sup> OECD is coordinating implementation which includes setting a global minimum corporate tax of 15%.<sup>51</sup> The new rules could substantially impact Vietnam's practice of attracting foreign direct investment by granting corporate tax incentives which include corporate tax rates of 5 – 10% compared with the domestic rate of 20%.

In 2022, Samsung's External Relations Director, Kim Yong Seok, noted that the company, *"hopes the Vietnamese Government can do research and issue new plans and measures to help foreign businesses investing here."*<sup>52</sup> In 2023, Hong Sun, Chair of the Korea Chamber of Commerce in Vietnam suggested that Vietnam, *"should consider fresh incentives like cash grants and refundable amounts that can meet qualifying deductions of the government, based on the expense of the business' qualifying investment."*<sup>53</sup> At a conference on the global minimum tax in April 2023, Samsung Vietnam CEO, Choi Joo Ho, reinforced the message, noting that, *"The Vietnamese government needs to make assertive decisions in the process of responding to the global minimum tax."*<sup>54</sup> At the conference, Vietnam's Minister of Finance, Ho Duc Phoc, admitted that the country's generous tax incentives would not offset FDI revenue under the global minimum tax. Samsung Vietnam CEO Choi Joo Ho furthered pressured the country stating that, *"in order to maintain FDI, Vietnam needs to develop monetary support mechanisms to supplement incentives for businesses that will lose preferential policies if the new tax rate is applied."*

Vietnam set up a special panel aimed at addressing this tax issue and the State Bank of Vietnam has stated that it would work with the Ministry of Finance and corporate stakeholders, including Samsung, to develop policies to attract foreign direct investment without violating the new global minimum corporate tax.<sup>55</sup> A proposal emerged to provide compensation for manufacturing or research to companies to offset the new 15% global minimum tax at a cost of at least USD\$200 million annually.<sup>56</sup> In response, OECD warned Vietnam about this proposal noting that *"if subsidies to multinationals were found to be compensation for the higher levy, the domestic top-up tax would be disqualified."*<sup>57</sup>

On November 29, 2023, with more than 93 per cent of votes in favor, the National Assembly of Vietnam approved a resolution on applying additional corporate income tax in line with the Global Anti-Base Erosion Rules (global minimum tax).<sup>58</sup> Under this resolution that took effect on January 1, 2024, a global minimum tax rate of 15% will apply to multinational enterprises (MNEs) with revenue exceeding 750 million euros (about USD\$800 million) or more in two of the four consecutive years. In addition to passing the Resolution, National Assembly lawmakers also emphasized the need to call on the government to immediately develop a support policy for foreign investors affected by the global minimum tax. Thus, it is expected that the Law on Corporate Income Tax will be amended, including policies to support foreign-invested corporations.



President and Head of Mobile Experience of Samsung Electronics, Roh Tae-moon (left), meets with Vietnamese Prime Minister Pham Minh Chinh (right) in Hanoi in August 2022.

## SAMSUNG LOBBIES AGAINST INDEPENDENT TRADE UNIONS IN VIETNAM

Vietnam has a single, government-led trade union federation, the Vietnam General Confederation of Labor (VGCL). As of May 2023, the VGCL had 11,330,878 members organized to the district level and sometimes at the company level.<sup>59</sup> However, the government-controlled trade union system has been described by Vu Quang Tho, Director of the Institute for Workers and Trade Unions, as “*inadequate*” and there are concerns that conflicts of interest between unions and employers can result in organizations that are afraid to advocate for workers’ rights.<sup>60</sup> Independent trade unions are outlawed and efforts to establish them have resulted in arrests and imprisonment.<sup>61</sup> Formation of trade unions and freedom of association is a requirement of ILO Conventions 87 and 98.<sup>62 63</sup> Vietnam has not ratified ILO Convention 87, but did ratify ILO Convention 98 in 2019.<sup>64 65</sup>

Samsung has actively lobbied against Vietnam’s ratification of ILO conventions. A Samsung Vietnam executive told members of the country’s National Assembly Social Affairs Committee that, “*If multiple unions are allowed by guaranteeing freedom of association according to Western order, it will cause confusion in Vietnamese society.*”<sup>66</sup> An ILO official in Vietnam told Hankyoreh that Samsung’s anti-trade union position paper was sent, “*...individually by mail to hundreds of policymakers, including Vietnamese lawmakers and labor officials.*”<sup>67</sup>

Between 2015 and 2016 when Vietnam signed the Trans-Pacific Partnership Agreement, the country was discussing ratification of ILO’s basic treaties as part of its implementation. However, Samsung intervened to oppose ratification, highlighting concerns about issues such as “*protection of freedom of association and the right to unite*” and “*right to collective bargaining.*” The company claimed that, “*The eight major ILO core agreements are all effectively included in Vietnamese labor law, regardless of whether they are implemented or not.*”<sup>68</sup>

Apparently one of Samsung’s concerns about trade unions in Vietnam was that if multiple trade unions were allowed, then “*...workers will actively demand labor unions to improve the working environment and protect workers’ rights.*”<sup>69</sup> The company also appeared concerned that if independent trade unions were allowed, they would challenge the company’s normal practice of high intensity overtime work. The company issued a not-so-subtle threat to Vietnam about this matter stating that, “*Increased rigidity in working hours in the high-tech industry soon leads to corporate relocation, resulting in a decrease in the employment population.*”<sup>70</sup> Samsung’s anti-trade union efforts in Vietnam include stopping potential collective action by questioning employees over their social media posts. Workers at Samsung Vietnam’s Bac Ninh factory note that, “*We’re told [by the managers] to report any posts critical of the company as soon as they go up.*”<sup>71</sup>

Vietnam is expected to ratify ILO Convention 87 in 2024 under pressure of complying with the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). As noted by Reuters, “Canada, whose trade with Vietnam is worth over \$10 billion, is reviewing a complaint about whether Vietnamese labour laws are in compliance with CPTPP’s obligations on workers’ rights.” European Union Ambassador to Vietnam, Julien Guerrier, noted that ratification of ILO Convention 87 and amendments of associated laws was “crucial” to comply with existing trade agreements.<sup>73</sup>

In 2020, Vietnam ratified a free trade agreement with the European Union that included labor rights provisions.<sup>74</sup> In addition, Vietnam’s updated labor code entered into force the following year.<sup>75</sup> Both developments signaled reform of Vietnam’s labor policy which now permits workers representative organizations (WROs). However, WROs are not independent trade unions. WROs can engage in collective bargaining only at the individual company level and cannot form sectoral or regional organizations. Furthermore, laws governing how WROs can register and are regulated have not been passed despite a 2020 deadline.<sup>76</sup>

## UNDERMINING TRADE UNIONS LEADS TO JAIL FOR SAMSUNG EXECUTIVES IN SOUTH KOREA

In South Korea, Samsung has a long history of opposition to trade unions claiming that it “has principle of management that does not need trade unions.”<sup>77</sup> An internal Samsung document described company actions to undermine the formation of trade unions, including how to identify workers likely to try to organize a union, how to monitor them, and how to isolate them to prevent the formation of a trade union.<sup>78</sup>

In 2019, the Chair of Samsung Electronics’ Board, Lee Sang-hoon, and Samsung Vice President, Kang Kyung-hoon, were sentenced to 18 months in prison for actively planning and leading the disruption of trade union activities along with more than 20 other Samsung employees.<sup>79</sup> In 2021, the Supreme Court acquitted Lee Sang-hoon citing illegal collection of evidence by the prosecution, but upheld the convictions of Kang Kyung-hoon, Samsung Electronics Vice President; Choi Pyeong-seok, Executive Director of Samsung Electronics Service; and Park Sang-bum, CEO of Samsung Electronics Service.<sup>80</sup>

Samsung also has an extensive history of undermining trade unions or violating labor laws in other Asian countries such as Indonesia and India.<sup>81</sup> In Indonesia, the company destroyed the first overseas trade union in approximately 40 days which was described as systematic “threats, persuasion, surveillance and violence.”<sup>82</sup> In India, Samsung’s efforts to undermine trade unions appears to have included company personnel impersonating government authorities.<sup>83</sup> Other examples of Samsung’s efforts to undermine trade unions exist in Germany, Hungary, Malaysia, and Thailand.<sup>84</sup>

Samsung's overseas violations of labor laws		
Country	Violation	Type of labor law
India	<ul style="list-style-type: none"> <li>Overtime work for probationary workers</li> <li>No vacations</li> <li>Obligatory overtime, extended work hours</li> </ul>	<ul style="list-style-type: none"> <li>Apprentices Act, Minimum wage law</li> <li>Factory Act, Industrial Employment Act</li> <li>Factory Act, ILO prohibitions on forced labor</li> </ul>
Indonesia	<ul style="list-style-type: none"> <li>Employing irregular/dispatch workers on production line</li> <li>Splitting irregular worker contracts into shorter terms</li> <li>Failure to pay irregular workers minimum wage</li> <li>Obligatory overtime and extended work hours</li> </ul>	<ul style="list-style-type: none"> <li>Labor standard law</li> <li>Labor law</li> <li>Minimum wage law</li> <li>Labor law, ILO prohibitions on forced labor</li> </ul>
Vietnam	<ul style="list-style-type: none"> <li>Excessive overtime</li> <li>Employing probationary workers on production line</li> </ul>	<ul style="list-style-type: none"> <li>Labor law</li> <li>Labor law</li> </ul>

Examples of Samsung’s labor law violations as outlined in Hankyoreh.

## BRIEF TIMELINE OF THE ELECTRONICS INDUSTRY IN VIETNAM

According to research from the Ministry of Industry and Trade, the process of establishing and developing the electronics industry in Vietnam can be divided into the following six stages.<sup>85</sup>

**1975 – 1990:** The stage of establishing the electronics industry in Vietnam. After 1975, the existing electronics enterprises in North Vietnam together with the newly taken over electronics companies from the South laid a foundation for the formation of the electronics industry. In 1984, the Vietnam General Department of Electronics and Informatics was founded with a scientific structure comprising State management agencies (under the Council of Ministers) and local member organizations (including production enterprises, service, supply, and warranty enterprises), and the Institute for Development Studies. In the late 1980s, the Vietnamese electronics industry was already able to assemble some essential electronic products to meet local demand. By 1988, the General Department was dissolved and merged into the Ministry of Heavy Industry.<sup>86</sup>

**1991 – 1995:** This was the most difficult stage of the Vietnamese electronics industry. Prior to this time, most electronics manufacturing companies were state-owned enterprises. During the 1990s, the Innovation Policy shifted the country from a centrally planned economy to a state-managed market economy. As a result, most electronics manufacturing companies were dissolved or changed their forms of operation.

**1996 – 2000:** This was the golden stage of the Vietnamese electronics industry when Vietnam started to rapidly shift toward a market economy and the United States removed its embargo against Vietnam. Many famous electronics companies from countries with developed electronics industries entered Vietnam, undertaking joint ventures with local enterprises, or investing in production lines. However, they mainly assembled products. Only two companies invested in manufacturing spare parts on a large scale, but mostly or solely for export: 1) Orion from South Korea, entered into a joint venture with Hanoi Electronics Company (HANEL), and invested in building a cathode ray tube (CRT) factory with an investment capital of USD\$178 million and a capacity of 1.6 million units/year, earning USD\$100 million per year.<sup>87</sup> Part of its products were supplied to local TV assembly factories and a larger part designated for export. In 2008, being unable to afford new technologies for LCD manufacturing to meet market demand, the factory declared bankruptcy and stopped production after 15 years of operation; and 2) Fujitsu from Japan invested nearly \$200 million USD to build a factory specializing in computer motherboards and printed circuit boards for hard drives in the Bien Hoa Industrial Zone, Dong Nai province in 1996. The high-tech operation could manufacture 14-layer printed circuits, but all the products were for export with an annual export value of USD\$500 million.

**2001 – 2005:** In this stage, local market demand for consumer electronics products was not big and the assembly of consumer electronics products was not very profitable. In the face of fierce competition from FDI companies and the localization policy of the government, the number of consumer electronic assembly companies declined rapidly. Out of 100 companies assembling consumer electronics products in late 1990s, only 12 companies existed in 2005, including leading Japanese and Korean electronics companies such as Sony, JVC, Toshiba, Panasonic, Samsung, LG, and Daewoo along with TCL from China and a few famous Vietnamese companies such as VTB, Hanel, Belco, and Tien Dat.<sup>88</sup>

**2006 – 2010:** Starting in January 1, 2006, under the Association of Southeast Asian Nations (ASEAN) Free Trade Area (AFTA) roadmap, Vietnam had to reduce import tax for imported electronics and electrical appliances in complete units from ASEAN countries from 30 - 40% down to 0 - 5%. Since January 1, 2007, after Vietnam became a full member of the World Trade Organization (WTO), government support and preferential treatment given to the electronics industry were also removed as a condition of Vietnam's accession to the WTO. Some FDI companies went bankrupt, stopped production, or moved to commerce and services. However, since Vietnam's accession, a new foreign investment wave has flowed into Vietnam, including major electronics industry investments from big companies such as Samsung Electronics (South Korea), Intel (USA), Nidec (Japan), Foxconn (Taiwan), Meikom (Japan), and Nokia (Finland). The investment projects by these groups increased the FDI capital in the Vietnamese electronics industry to over USD\$10 billion.

**2011 – present:** 2011 marked the first year of implementing the 10-year socio-economic development strategy (2011 - 2020) and the 5-year socio-economic development plan 2011 - 2015. With the urgent need to restructure the country's economic growth model, Vietnam has continued to shift its industrial structure in the direction of gradually reducing the proportion occupied by the mining industry and increasing the

proportion of the processing industry. Vietnam has also promoted the development of supporting industries, including electronic components. During the period 2016-2020, the electronics industry achieved remarkable growth. According to the General Statistics Office, exports of electronics, computers and components during this period grew by an average of 23.8% per year, bringing Vietnam from 47th globally in 2001 to 12th globally and 3rd in the ASEAN region in electronics exports. The Ministry of Industry and Trade notes that Vietnam's electronics industry has now produced most essential electronic products such as air conditioners, televisions, washing machines, phones, printers, etc. The rapid development of the electronics industry is mainly due to attracting large investments from Korean and Japanese multinational corporations in the field of electronic component manufacturing. But the consequence is that the industry is also highly dependent on foreign investors as reflected by sales data showing that up to 95% of export turnover belongs to FDI enterprises.

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# ANNEX 2. SAMSUNG ELECTRONICS' OCCUPATIONAL DISEASE ISSUES IN SOUTH KOREA

## KEY POINTS IN THIS ANNEX

1. The case of Hwang Yumi, a Samsung Electronics female worker who died of leukemia at age 22 in 2007, led to the first workers' compensation claim for occupational disease in the South Korean semiconductor industry.
2. As of July 2021, there were more than 700 cases of occupational diseases in the electronics industry reported to SHARPS, including more than 200 fatalities.
3. SHARPS has successfully placed the issue of excessive burden of proof in compensation claims filed by sick workers on the social agenda. This has led to court rulings and related policy changes to lower the burden of proof, and contributed to the visibility of occupational cancer in the electronics industry and other sectors, as well as improving workers' compensation rates.
4. In 2017, the South Korean Supreme Court ruled in a case involving a Samsung LCD worker with multiple sclerosis that the standard for proving work-relatedness should be lowered. The Court concluded that difficulties in proving the work-relatedness of an occupational disease arising from the employer's refusal to cooperate or delays in investigations by relevant agencies, could be considered as indirect evidence in favor of the worker.
5. In 2014, a dialog began between Samsung and SHARPS to discuss three issues: apology, compensation, and measures to prevent recurrence. Samsung altered the dialog in favor of a mediation committee. However, it withdrew from the process after the committee's recommendations were released in 2015. In response, SHARPS began a sit-in that lasted 1,023 days in front of Samsung headquarters calling for the company to fulfill its commitments to social dialogue.
6. In 2016, as a result of the sit-in, SHARPS successfully pressured Samsung to agree to preventive measures. In 2018, Samsung agreed to offer a public apology and to set up a compensation scheme for occupational diseases.
7. In 2018, Samsung publicly apologized for its failure to manage potential health risks in its semiconductor and LCD factories.
8. The compensation system agreed upon by Samsung and SHARPS applies to all former and current workers employed at Samsung's semiconductor and LCD production lines in South Korea since 1984, including in-house subcontractors. Compensation is not contingent upon risk assessment, and eligible diseases include a variety of cancers including rare cancers, reproductive diseases, and children's diseases. The system adopts a precautionary approach to compensation designed to ensure that as many workers as possible are compensated without the necessity of proving work-relatedness.
9. SHARPS has actively advocated to address damage to reproductive health in electronics industry workers. In December 2021, the South Korean National Assembly passed an amendment to the Workers' Compensation Insurance Act, known as the Prenatal Workers' Compensation Act, which added impaired health of workers' children as an occupational disease.
10. Currently, SHARPS is working with trade unions and other civil society organizations to enhance the legal framework for labor and environmental safety and health, including improving the workers' compensation insurance system, enacting a law to punish serious accidents, strengthening chemical regulations, and curbing the outsourcing of harm to smaller workplaces.

## HOW SHARPS BEGAN

In 2007, Hwang Yumi, a 22-year-old female worker at Samsung Semiconductor, died of leukemia. Her father, Hwang Sang-ki, learned that several other co-workers had died of leukemia at the same factory. He believed his daughter's leukemia was occupationally caused and attempted to petition for workers' compensation with a government agency. It was the first workers' compensation application for an occupational disease in the South Korean semiconductor industry.

Labor, human rights, and occupational health activists helped Hwang Sang-ki file for workers' compensation and learned that this was not the only case of a serious illness in a semiconductor worker. In November 2007, they formed a network for the health and human rights of Samsung workers, which later became South Korea's first public interest organization for the health and safety of workers in the high-tech electronics industry, called Supporters of Health and Rights of People in Semiconductor Industry, or SHARPS.



Hwang Yumi, sick with leukemia, and her father, Hwang Sang-ki.

SHARPS has carried out various activities for the right to work in a safe and healthy environment, the right to compensation for health damage through the workers' compensation system, and the right to know and participate in the shaping of a safe working environment. In particular, SHARPS has focused on making the voices of victims heard in public, supporting them to receive workers' compensation, raising social awareness of harmful working conditions in the electronics industry, and improving laws and institutions related to occupational health. In addition, SHARPS has worked in solidarity with a variety of local and international civil society movements to shed light on corporate misbehavior such as the failures by Samsung and other electronics companies to respect labor rights including the right to organize. It also has highlighted the transfer of hazardous work to subcontractors and more vulnerable offshore locations. SHARPS believes that workers' rights cannot be fully exercised without addressing these social issues comprehensively.

SHARPS' main areas of activity and accomplishments include:

### 1) ACTIVITIES TO GET WORKERS' ILLNESSES RECOGNIZED LEGALLY AS OCCUPATIONAL DISEASES

Prior to SHARPS, the issue of occupational diseases among electronics workers remained largely invisible to society, with Hwang Yumi's case in 2007 being the first workers' compensation claim in the South Korean semiconductor industry. SHARPS has been working to expose cases of electronics workers' occupational diseases and to have them officially recognized as work-related diseases under the workers' compensation insurance system.

The first step was to find victims and encourage them to speak out. Since its beginning, SHARPS has been steadily collecting victims' stories and publicizing them with their consent. From 2007 to March 2021, SHARPS documented more than 700 cases of occupational diseases, including more than 200 deaths. This represents only a fraction of the actual number of occupational disease cases, as affected workers and their families had to voluntarily disclose their stories through SHARPS. Nonetheless, it marked a very significant social campaign at a time when official data on occupational diseases among high-tech electronics workers was nonexistent. SHARPS' publicity campaign prompted other workers with similar illnesses to come forward and share their stories and many others became aware of the dangers inherent in the industry.



A scene from the documentary, *Stories from the Clean Room*, which highlights various cases of occupational diseases in the high-tech electronics industry. Produced by SHARPS with support from IPEN, it has been screened in many venues globally, including in the South Korean National Assembly.

According to “*Epidemiologic Study on the Health Status of Semiconductor Manufacturing Process Workers (Focusing on Cancers)*,” published by the South Korean government’s Occupational Safety and Health Research Institute, in 2019, 3,442 out of 197,641 workers who worked at nine sites of six semiconductor companies between 1998 and 2015 developed cancer, and 1,178 out of 200,997 workers employed at these sites between 1998 and 2016 died of cancer.<sup>1</sup> Considering that the scope of this study was limited to six companies that were able to provide data in the semiconductor manufacturing sector of the overall electronics industry and that the analysis was limited to cancer among other potential occupational diseases, these results are likely to be the tip of the iceberg. However, it is likely to be much closer to reality than SHARPS’ statistics, which relied upon victims’ voluntary reports. From 2021 onward, these limitations have prompted SHARPS to discontinue the release of its compiling of occupational disease cases and occupationally caused fatalities. However, SHARPS continues to receive reports from victims and provides support.

By July 2023, SHARPS assisted 179 workers from various companies, including two Samsung units, Samsung Electronics and Samsung Display (118 cases); SK Hynix (13 cases), two LG units, LG Display and LG Electronics (5 cases); and Amkor Technology Korea (5 cases); in petitioning for workers’ compensation for a total of 38 types of diseases. Of the 179 claims, a total of 23 types of diseases in 98 workers have been recognized as being entitled to workers’ compensation. Most of the diseases have been recognized as qualifying for workers’ compensation in the electronics industry for the first time in South Korea. Occupational cancers such as lymphohematopoietic cancer (38 cases; leukemia, non-Hodgkin’s lymphoma, aplastic anemia, and multiple myeloma), breast cancer (16 cases), brain tumors (13 cases), lung cancer (6 cases), ovarian cancer (3 cases), large cell neuroendocrine carcinoma (1 case), melanoma (1 case), pancreatic cancer (1 case), and osteosarcoma (1 case), are the most common. There are also rare and incurable diseases such as lupus (3 cases), multiple sclerosis (3 cases), Parkinson’s diseases (2 cases), systemic sclerosis (1 case), neuromyelitis optica (1 case), and neurofibromatosis (1 case). Renal failures (2 cases), exposure to radiation (2 cases), depression, skin disorder, and reproductive health problems such as infertility were also recognized as being entitled to workers’ compensation.

In addition to aiding individual compensation cases, SHARPS has also contributed to the improvement of the workers’ compensation system. A major focus has been on placing the excessive burden of proof for workers’ compensation on the social agenda.<sup>2</sup> The burden of work-relatedness proof for workers’ compensation is a long-standing and commonplace problem, especially in the case of occupational cancers and rare diseases within the high-tech electronics industry. This is due to the limited research conducted on the occupational causes of cancer and rare diseases and the limited ability of traditional measurement methods to comprehensively assess the work environment in the high-tech electronics industry. Even though there are some hazards for which assessment techniques exist, they cannot be assessed because employers refuse to provide the necessary information. As a result, it is almost impossible for injured workers to prove a causal relationship between their illness and their work.

SHARPS has helped afflicted workers through many years of administrative litigation, resulting in a number of landmark rulings that break through the aforementioned limitations. One notable example is a ruling by the South Korean Supreme Court in 2017 on a case involving a Samsung LCD worker with multiple sclerosis. The country's highest court held that the standard for proving work-relatedness be lowered, citing the rarity of the disease and the special circumstances of the high-tech electronics industry. A key element of the decision was that difficulties in proving the disease due to the employer's refusal to cooperate or delays in investigations by relevant agencies could be considered as indirect evidence in favor of the worker (Supreme Court, August 29, 2017, 2015DU3867).<sup>3</sup>

In response to a series of court decisions in favor of a lowered burden of proof, the government announced improvements to the workers' compensation process.<sup>4</sup> In August 2018, the Ministry of Employment and Labor announced that it would streamline the process of determining work-relatedness for eight occupational cancers (leukemia, multiple sclerosis, aplastic anemia, ovarian cancer, brain tumor, malignant lymphoma, breast cancer, and lung cancer) that have afflicted workers in the same or similar processes as previously recognized as being entitled to workers' compensation. The reformed process omitted requirements for epidemiological studies and adopted the principle of presumption, thereby "*reducing the heavy burden of proof on workers and improving the process to make it easier for workers' compensation.*"<sup>5</sup> The Ministry also announced plans to apply the reformed process to other diseases recognized as work-related and to occupational cancers in other industries. These measures have heightened social awareness of occupational cancer across various sectors beyond the electronics industry. Additionally, they helped increase the number of occupational-cancer claims as well as the approval rate of workers' compensation cases.

## 2) ACTIVITIES TO ENCOURAGE INVESTIGATIONS, RESEARCH, AND ACCESS TO INFORMATION ON LABOR CONDITIONS IN THE ELECTRONICS INDUSTRY

Research on labor conditions and worker health in the high-tech electronics industry, especially on hazardous chemicals, has to date been scarce in South Korea and internationally. This lack of knowledge and information poses serious constraints and threats to workers' rights to health, safety, and compensation.

From the beginning, SHARPS has been calling on the South Korean government to investigate chemical use and worker health in semiconductor factories. SHARPS directly collected reports from former and current workers to build a comprehensive body of information on workers' diseases and working conditions and analyzed it in cooperation with researchers. The organization has actively participated in labor health-related events and conferences at home and abroad to raise awareness of labor health issues in the high-tech electronics industry. Together with local and international occupational health experts, SHARPS has been advocating for efforts from the government, companies, and academia to identify causes and prevent occupational illnesses.<sup>6,7</sup>

As a result of these activities, the Occupational Safety and Health Research Institute of the Korea Occupational Safety and Health Agency (KOSHA) has conducted research on the working environment in the semiconductor industry and conducted epidemiological studies on cancer among semiconductor industry workers.<sup>8,9,10,11</sup> Scholars from universities and independent research organizations have also published numerous papers in specialized occupational health journals. These papers discussed a wide range of topics related to the health and illness of workers. One paper highlighted the seriousness of occupational cancer and rare diseases among workers in the high-tech electronics industry,<sup>12</sup> while other papers provided warnings about the reproductive health and cancer risks faced by semiconductor workers through a comprehensive review of existing studies.<sup>13,14</sup> A number of research papers explored the working environment characteristics of disease based on data compiled by SHARPS,<sup>15</sup> identified and warned about the presence of carcinogens in chemicals used in semiconductor factories,<sup>16</sup> together with their related exposure risks,<sup>17</sup> and limitations of pre-existing hazardous chemical exposure management<sup>18</sup> and assessment methods.<sup>19</sup>

SHARPS has also been active in advocating for the right of workers and other members of society to access information. It has worked on various fronts, including claims and lawsuits for disclosure of safety and health information on working conditions, legislative campaigns to ensure the right to know, and campaigns to amend the Industrial Technology Protection Act, which undermines the right to access information (please see Annex 3).

### 3) ACTIVITIES TO DRIVE CORPORATE RESPONSIBILITY AND ACTION ON OCCUPATIONAL HEALTH ISSUES IN THE ELECTRONICS INDUSTRY

SHARPS has consistently called not only for legislative and systemic improvement, such as the Occupational Safety and Health Act and the Workers' Compensation Insurance System, but also for corporate accountability and industry-wide efforts. It has also organized practical activities in which affected workers and their families, various civil society organizations, and many citizens can participate.

SHARPS' most prominent action against the industry was a 1,023-day sit-in in front of Samsung headquarters between 2015 and 2018. The origins of the sit-in date back to late 2012, when Samsung offered to talk to SHARPS. At the time, the Superior Court was about to rule on the workers' compensation claims by five leukemia victims, including Hwang Yumi. Samsung offered to talk to the plaintiffs to settle the case out of court by offering individual compensation if they withdrew the lawsuits. The victims' families discussed the offer and decided to refuse to give up the lawsuit but noted that if Samsung was willing to engage in a dialog to resolve the issue of occupational diseases apart from the lawsuit, that they would be willing to do so.

The so-called *social dialogue* between SHARPS and Samsung finally began in 2014 after 10 months of preliminary discussions to finalize a three-item agenda of apology, compensation, and measures to prevent recurrence. However, Samsung refused to discuss the agreed-upon agenda, suspended the dialogue, and unilaterally declared its intention to create a third-party mediation committee. When the recommendations of the mediation committee were released in July 2015, Samsung refused to even discuss them and announced its own compensation criteria, claiming that all issues had been resolved. In response, SHARPS initiated a sit-in in front of Samsung's global headquarters to demand that the company fulfill its social dialogue commitments, and used it as a base to gather solidarity and support from many affected workers, their families, activists, and citizens.

As a result of the sit-in, SHARPS was able to push Samsung to agree to preventive measures in 2016 and finally to offer a public apology and a compensation scheme for occupational diseases in 2018.<sup>20 21</sup> The settlement was crafted by the mediation committee and incorporated several important principles from SHARPS' initial demands. The compensation system for the illnesses of former and current workers began operations in January 2019 and will continue for 10 years.



A statue symbolizing strong semiconductor workers by artist, Na Gyu-hwan, joins SHARPS' sit-in protest in front of Samsung headquarters in Seoul.



Kim Ki-nam, Vice Chairman and President, DS Division of Samsung Electronics (left), Kim Ji-hyung, Chairman of the Mediation Committee (center), and Hwang Sang-ki, representative of SHARPS, pose for a photo after signing the agreement at the press center in 2018.

## KEY ELEMENTS OF THE AGREEMENT BETWEEN SHARPS AND SAMSUNG

The main elements of the agreement between SHARPS and Samsung on preventive measures, apology, and compensation for occupational diseases are shown below. These elements were finalized in 2016 and 2018.

### A. PREVENTIVE MEASURES

The Mediation Committee established two pillars of preventive measures: 1) strengthening Samsung’s internal occupational safety and health management system; and 2) establishing a system for verification and inspection by an external independent organization, the Ombudsman Commission.

Strengthening the internal occupational safety and health management system includes a variety of improvements to the existing system, such as strengthening the organization, size, and role of Samsung’s health management team and extending the retention period of safety and health data, to ensure that workers’ health and safety are protected.

The Ombudsman Commission was established as an external organization with a total of three third-party experts as its members. The Commission worked from 2016 to 2021 in which it made several achievements with certain limitations. The most notable limitation of their work was that Samsung’s secrecy limited the Commission’s ability to conduct investigations and implement improvements. Nonetheless, it was a significant achievement to require Samsung to submit to oversight by external experts, even temporarily, considering the company’s previous refusal of any independent oversight.<sup>22</sup> There were some practical, meaningful changes in Samsung’s safety and health management such as:

- Itemize critical hazardous substances and prohibit them;
- Continuously monitor hazardous substances in the workplace; and
- Establish a job-exposure matrix.

The Ombudsman Commission’s Comprehensive Diagnosis Report, Implementation Inspection Report, and Activity White Paper are currently available on the commission’s website (<http://www.samsungombuds.org/>).

In 2018, when the compensation scheme was finalized, the mediation committee suggested that Samsung make an unconditional donation of 50 billion won (approximately USD\$37.4 million) to the Korean Occupational Safety and Health Agency, a government agency. Samsung agreed to the proposal, which was earmarked for establishing a center aimed at improving the safety and health of workers in vulnerable areas, particularly in the electronics industry.

## B. SAMSUNG'S APOLOGY

The settlement was finalized at a formal signing ceremony between SHARPS and Samsung in Seoul on Friday, November 23, 2018. At the event, Samsung's Vice Chairman and President, DS Division, Kim Ki-nam stated that *"Samsung Electronics failed to sufficiently and completely manage the potential health risks of its semiconductor chip and LCD production lines."*<sup>23</sup> He offered a formal apology on Samsung's behalf, stating that *"beloved colleagues and their families have suffered for a long time, but Samsung did not act sooner."*<sup>24</sup>



Samsung Electronics Vice Chairman and President, DS Division, Kim Ki-nam, bows to the victims and their families at the press center in 2018.

In response, Mr. Hwang said, *"Today's apology from Samsung's CEO is frankly not enough for the victims and their families. In fact, no apology will ever be enough for the countless deceptions and insults [Samsung] inflicted on SHARPS, the pain of occupational diseases, and the loss of loved ones. But I will take today's apology as a sign of Samsung's commitment."*<sup>25</sup> He also emphasized, *"Prevention of occupational diseases is more important than compensation. Occupational safety and health acts should be strengthened so that right to know and right to participation not only of workers but also of all citizens can be guaranteed."*<sup>26</sup> He also noted that other Samsung companies in South Korea and Samsung factories in other countries are experiencing occupational diseases and called on the company to *"create a more comprehensive system for all victims."* Mr. Hwang concluded his remarks by urging those implementing the compensation program to keep in mind who they are working for: *"I am glad that I was able to fulfill the promise I made to my daughter, Yumi. But I cannot forget the pain my family and Yumi had to go through. So many people share the same pain. I hope that all those who implement compensation programs or manage funds will keep this [pain] in mind."*

*The Korea Times*, the country's major English language daily, editorialized that, *"Samsung must recognize the link between illness and harmful work environments. It should take full legal responsibility for failing to protect its employees from potential workplace accidents and occupational diseases."*<sup>27</sup>

## C. COMPENSATION FOR HEALTH DAMAGES

The compensation system agreed upon by Samsung and SHARPS has the following features;

- 1) Compensation is not limited to victims who advocated with SHARPS. Instead, all former and current workers who worked in semiconductor and LCD production in South Korea since 1984 are eligible.
- 2) In-house subcontractor workers, such as temporary workers hired by agencies to work at the company's facilities with its equipment, who often perform the most dangerous work with the least protection, are covered.

- 3) Compensation is not contingent upon risk assessments. Cancers and rare diseases are eligible for compensation if the worker worked for at least one year and contracted the disease before age 65. If the worker left before diagnosis, there is a cap of 5, 10, or 15 years between their departure and diagnosis, depending on the disease. Reproductive and children's diseases are also eligible for compensation, although the criteria are different.
- 4) The Compensation Committee is run by an independent law firm.
- 5) The diseases eligible for compensation included many of the serious illnesses of semiconductor and LCD manufacturing workers, publicly known as a result SHARPS' work. These include cancer (leukemia, lymphoma, etc.), 22 rare cancers, rare diseases (multiple sclerosis, lupus, etc.), reproductive diseases (miscarriage, stillbirth), and children's diseases (tumors, various congenital malformations).

One of the most important features is the inclusion of a significant number of illnesses for which work-relatedness is inconclusive. The mediation committee recognized that there was uncertainty about the work-relatedness of certain diseases. It therefore devised a precautionary approach to compensation, aimed at ensuring that as many workers as possible are compensated without having to prove work-relatedness. This is similar to the precautionary approach to decision-making in various UN chemicals agreements.

## SHARPS' ACTIVITIES SINCE 2018

From 2018 onward, SHARPS has continued its work to support victims of occupational diseases, conduct research and investigations into electronics worker health and safety, and advocate for right to know, while expanding into several new areas.

### 1. Activities to prevent and compensate workers' reproductive harm

Damage to reproductive health in electronics industry workers and their children has been an invisible problem in South Korean society. SHARPS raised public awareness about these issues, together with four workers in the high-tech electronics industry by employing a variety of methods such as informative events, press conferences, and workers' compensation petitions.

SHARPS' efforts were well received by major media outlets, raising social awareness that the right to health should be protected not only for workers but also for their children.<sup>28</sup> The campaign also exerted a significant influence on the passage of the so-called *Fetal Injury Act*, an amendment to the Workers' Compensation Insurance Act that legislated damage to the health of a worker's child as an occupational disease.<sup>29</sup> Non-fiction writer, Hee Jeong, published *People Who Make Problems into Issues* (subtitled: *Why Was My Child Born Sick*), featuring the stories of several people who participated in the campaign to revise the law, as well as the debate on women's labor and their reproductive rights.<sup>30</sup>

The book *People Who Make Problems into Issues*, published in 2022, organized by SHARPS and written by Hee Jeong.



## **2. Activities for continuous improvement of health and safety laws and systems**

In January 2021, South Korea enacted the Act on the Punishment of Major Accidents. The act punishes business owners, managers, public officials, and legal entities that violate safety and health obligations while operating businesses or workplaces, public facilities, and public transportation, or handling raw materials or manufactured goods that are harmful to human health, thereby causing a major accident. Under the act, a major accident is defined as one or more fatalities, or two or more injuries requiring medical treatment for more than six months. SHARPS has proactively participated in a joint campaign by labor and civil society organizations to enact the law for several years.

SHARPS has also been active in raising awareness and working to improve the overall workers' compensation system. Its ongoing efforts have resulted in court mandates to lessen the burden of proof for workers' compensation and a government policy to introduce a presumption principle. However, many problems persist in South Korea's workers' compensation system. Still, it takes too long to investigate the link between work and illness, leaving affected workers to bear the burden of medical treatment and livelihood for years. SHARPS has been organizing specific cases of harm to highlight problems in the system and propose ways to improve it.

After President Yoon Seok-yeol took office in May 2022, government policies have generally shifted toward suppressing labor rights. Attempts have been made to reverse or undermine previous legislative and institutional improvements related to occupational safety and health. SHARPS has been involved in solidarity activities with other labor and civil society organizations to prevent deterioration in safety and health laws and institutions.

## **3. Activities to regulate chemicals to protect human health and environment**

In 2015, South Korea began to bring its chemicals regulations in line with international standards by overhauling the Chemicals Management Act and implementing the Act on Registration and Evaluation of Chemicals. However, the Yoon administration has denounced these laws as "*killer regulations*" and has attempted to deregulate the industry by reducing the scope of chemical registration. Civil society, including SHARPS, is calling for an end to the regressive revisions in chemical regulations. They are working to introduce a management plan and notification system not only for known hazardous chemicals but also for substances whose hazards have not yet been determined.<sup>31</sup>

## **4. Workplace safety and health campaigns with labor unions**

In recent years, labor unions have become more active at Samsung's affiliates in the electronics sector. In 2021, SHARPS entered into an agreement with the Samsung Display Trade Union to work together to address occupational diseases. In July 2023, nine labor unions of the conglomerate's affiliates that manufacture, sell, and repair Samsung Electronics products, including the National Samsung Electronics Union, formed a coalition. The new coalition declared a workplace safety and health movement with a tagline, "*Three Nos,*" meaning no one gets sick, no one gets hurt, and no one dies.<sup>32</sup> SHARPS is working together with these unions in various areas such as research on working conditions and education.

## **5. Activities on workers' health right in small businesses and outsourcing of harm**

Smaller businesses are structurally less capable or empowered to manage safety and health. The outsourcing of harm practice, where dangerous and hazardous processes are transferred from large companies to smaller suppliers at the expense of safety, is very prevalent in the electronics industry. This practice adversely affects not only production workers who have to directly handle hazardous materials but also workers whose labor conditions and workplace risks are out of public view such as janitors who clean factories. SHARPS is engaged in various solidarity activities with other workers' health advocates to raise awareness of these issues and explore alternatives.



In July 2023, nine labor unions in the coalition of Samsung's affiliates in the electronics sector held an event to launch their campaign, *Samsung with Three Nos*. SHARPS participates in the effort.

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# ANNEX 3. SAMSUNG UNDERMINES RIGHT TO KNOW IN SOUTH KOREA

## KEY POINTS IN THIS ANNEX

1. Right to know is a fundamental principle of chemical safety and human rights that guarantee the public and workers the right to information about hazards in communities and workplaces.
2. South Korea's Occupational Safety and Health Act does not directly provide for workers' right to know. Employers have an obligation to provide only limited amounts of information. Workers have the right to request some information, but only through "worker representatives." There is no procedure for individual workers to request information without going through the "worker representative."
3. Both the electronics industry and the South Korean government have blocked compensation of sick workers by withholding key information pertaining to chemical use and exposure of workers, claiming that it is confidential business information.
4. The working environment measurement report is a basic tool for providing information about chemical substances and chemical safety and health management.
5. Ailing and deceased workers and their families filed lawsuits to obtain disclosure of the working environment measurement reports to facilitate workers' compensation.
6. In 2018, Samsung requested the Ministry of Trade, Industry and Energy to check whether the working environment measurement reports contain information related to national core technologies. The Ministry convened a close-door panel to review Samsung's request and consented to the company's claim.
7. In 2019, the National Assembly amended the Industrial Technology Act requiring public agencies to keep all information related to national core technology secret. The Act does not contain any exemption for disclosure of information involving threats to human health and the environment.

## INTRODUCTION

This annex provides information about right to know in South Korea. The annex describes occupational health and safety issues connected to right to know, activities of SHARPS to promote right to know, and how Samsung has attacked and undermined this fundamental chemical safety and human rights principle.

## WHAT IS RIGHT TO KNOW?

Right to know is a fundamental chemical safety and human rights principle that guarantees the right of the public and workers to information about hazards in communities and workplaces. Right to know is part of global treaties and agreements, as well as a key factor in preventing human rights violations. As noted by a UN Special Rapporteur on Toxics and Human Rights, "*Information is crucial to preventing human rights violations resulting from exposure to hazardous substances and wastes; crucial information on hazardous substances and wastes is, however, frequently unavailable and inaccessible... Information about hazardous substances is essential to prevent risks, mitigate harms, conduct focused research on safer alternatives, provide treatment and remedy, and ensure transparency, participation and consent in decision- and policymaking.*"<sup>1</sup>

The environmental and community aspects of right to know grow out of agreements by the global community at the Rio Earth Summit in 1992. Rio Principle 10 states that, "*each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.*"<sup>2</sup> Countries in Latin America and the Caribbean used Rio Principle 10 as a foundation for the regional Escazú Agreement which was finalized in 2018.<sup>3</sup> The objective of the agreement is to guarantee, "*rights of access to environmental information, public participation in the environmental decision-making process and access to justice in environmental matters...*" with the goal of contributing to the right to a healthy environment and sustainable development.<sup>4</sup>

Right to know is critical for occupational health and safety. In 1990, the International Labor Organization (ILO) finalized Chemicals Convention No. 170 and South Korea ratified it in 2003.<sup>5,6</sup> Article 18 of the treaty states that workers and their representatives have the right to “*information on the identity of chemicals used at work, the hazardous properties of such chemicals, precautionary measures, education and training.*”

In 2018, the UN Special Rapporteur on Toxics and Human Rights delivered a report to the Human Rights Council focused on the human rights of workers. It noted that, “*workers around the world find themselves in the midst of a public health crisis due to their exposures to hazardous substances at work.*”<sup>7</sup> On right to know, the report notes that, “*It is never legitimate for States or businesses to refuse to disclose health and safety information on the grounds that it is confidential, particularly on the grounds that it would adversely affect profits or competitiveness.*” The report cites the inclusion of right to know obligations in legally binding global treaties including the Stockholm Convention and the Minamata Convention.

In 2019, the UN Special Rapporteur on Toxics and Human Rights issued a report on human rights principles and the protection of workers.<sup>8</sup> Principle 8 states, “*Every worker has the right to know, including to know their rights.*” Key stated elements of this principle include:

- The right to information is the foundation for the realization of all workers’ rights regarding toxic exposures.
- Every worker has the right to know current information about their actual and potential exposures to toxic and otherwise hazardous substances.
- Occupational health and safety information must be available and accessible to workers in a form that effectively serves their needs, bearing in mind their skills, language proficiency and circumstances, and communicated through training and other means.
- States are duty-bound to generate, collect, assess and update information on hazards and risks encountered by workers, as well as epidemiological and other evidence of occupational diseases and disabilities.
- Business enterprises are responsible for identifying and assessing the actual and potential exposure by workers to toxic substances in their supply chains and resulting from their own activities.
- As well as the right to information about occupational health risks, workers also have the right to be informed of all their rights and the relevant duties and responsibilities of States and business enterprises regarding these rights, and how they can exercise and defend their rights when they are abused or violated.

## WORKERS’ RIGHT TO KNOW IN SOUTH KOREA

South Korea’s Occupational Safety and Health Act (OSH Act), partially amended on August 8, 2023, does not explicitly define workers’ right to know but indirectly guarantees it through corporate obligations to “*provide employees with information on safety and health at the relevant place of business*” (Article 5).<sup>9</sup> Employers must provide the following types of information:

- Educate employees on safety and health (Article 29)
- Post or keep the provisions of the OSH Act and safety and health management regulations (Article 34)
- Install or affix safety and health signs (Article 37)
- Keep a hazard prevention plan and the process-safety report in the place of business (Article 42 and 45)
- Post a list of matters subject to the order for corrective measures which is issued by the Ministry of Employment and Labor (Article 53)
- Post or keep the material safety data sheets and guidelines on managing those substances (Article 114)
- State warnings on a container of a substance subject to material safety data sheet preparation (Article 115)
- Inform employees at the relevant workplace of the results of the work environment measurement (Article 125)
- Provide an explanation about the results of work environment measurement or health examinations when requested by the occupational safety and health committee or the representative of employees (Article 125 and 132).

There are several significant problems related to right to know in South Korea's OSH Act. These include the following five issues:

1. The information listed in the law represents the minimum that should be provided to workers, but in practice it often constitutes the maximum amount of information that workers usually have access to. Workers ideally should have access to any information in any form or content that they need to protect their health and safety or that of their coworkers. However, this is not guaranteed by law. No matter how important the information is to safety and health, employers are not required to provide it to workers unless it is listed in the law. As a result, workers' rights are limited by the employer's obligations under the law.
2. Information required by the law is not communicated effectively enough to satisfy workers' right to know. Employers are merely fulfilling a formal obligation to post some materials and store others. Workers often do not even know that such information exists, and even if they do, it is very difficult for them to read, understand, and act on it. The poor communication of information is such a serious problem that there have been calls to strengthen the employer's obligation to "*post or notify*" safety and health information to "*make it available to workers.*"<sup>10</sup> This would require employers to communicate information more actively.
3. There is no specific path or procedure for workers to exert their right to know. The OSH Act is completely silent on the types of information or procedures that workers can request, as they are only the recipients of information. The Act only states that "*worker representatives*" (definition below) can request explanations for very limited items, such as working environment measurement or health examination results (Articles 125 and 132).
4. Even the provision that allows workers' representatives to request limited information is highly ineffective. The OSH Act defines "*worker representative*" as "*a labor union organized by the majority of workers, if there is a labor union, or a person representing the majority of workers if there is no labor union organized by the majority of workers*" (Article 2). Note that in 2021, only 14.2% of workers in South Korea were unionized in 7,105 labor unions.<sup>11</sup> This means that out of the 1.9 million workplaces in the country only 0.36% have a labor union.<sup>12</sup> Moreover, not all the trade unions represent the majority of workers, thereby eliminating them as a "*worker representative.*" Even where there is a "*worker representative,*" this provision is worthless if the right to information is not actively used. Samsung Electronics typifies this, as its long-standing anti-union policy has made it almost impossible for a "*worker representative*" to be independent of the company, and the recently formed labor union is not yet big enough to represent the majority of workers.
5. The current OSH Act makes workers' compensation very difficult when illnesses are caused by the work environment. Under the current workers' compensation system, workers bear the burden of proving the relationship between their work and their illness, but their limited right to know makes it very difficult for them to obtain the relevant information. This is especially problematic for diseases such as cancer, which often develop long after exposure, sometimes when employees have already retired. In these cases, employers rarely provide information about their past work environment. This is because the law does not require employers to provide information to retired workers. This problem can be addressed by improving the operation of the workers' compensation insurance system by lowering the required amount of proof. However, identifying the cause of illness in the working environment and preventing further damage in the future still remains limited to relying on the goodwill and cooperation of employers.

## SAMSUNG WORKERS HANDLE CHEMICALS WITHOUT KNOWING THEIR TOXICITIES

Workers at Samsung Electronics are not fully aware of the hazards and risks associated with the materials they handle. They are not aware of carcinogenic or reproductive toxins that can cause chronic illnesses through prolonged exposure, and are unaware of toxins that can pose an immediate threat to their health after a single exposure. A typical example is the hydrofluoric acid leak that occurred at Samsung Electronics' Hwaseong Plant, a semiconductor factory, in January 2013. One worker was killed and four others were injured after a small exposure that began after a valve failure in a hydrofluoric acid storage tank was not adequately addressed. This accident prompted the Ministry of Employment and Labor to conduct special inspections of Samsung Electronics' Hwaseong Plant, which turned up 2,004 violations of the Occupational Safety and Health Act.

As a result of the accident, the Ministry of Employment and Labor ordered a comprehensive evaluation of safety and health management at all Samsung Electronics semiconductor plants. Accordingly, in April 2013, the Korea Occupational Safety and Health Agency (KOSHA) conducted a comprehensive evaluation of Samsung Electronics' Giheung Plant. KOSHA concluded in its report that the hydrofluoric acid leakage was primarily caused because *“both the workers and managers who actually use and handle the chemical, as well as the safety and health staff and management, were not properly informed about the toxicity of hydrofluoric acid and how to handle it.”*<sup>13</sup> The report also pointed out that workers and managers were unaware of important safety and health information not only about hydrofluoric acid but also about other chemicals. Points made in the report include:

- Workers were unable to answer or gave incorrect answers to questions related to the hazards of the chemicals they were handling, such as what is a hazardous or dangerous substance, how can they get the information they need from a Material Safety Data Sheet, and what actions are required in the workplace.
- Workers had a low level of understanding of the chemicals they handled, regardless of how long they had been working with them or how many they used. For example, the understanding of those in charge of raw material supply or production equipment, who handled about five substances, was similar to that of personnel in charge of safety and environment, who had dozens of substances to manage.
- It appears that there was a lack of actual education on the hazards and risks of chemicals at this plant from the beginning of operations to the present time.
- Investigators wanted to determine if some of the ingredients were incorrectly claimed as trade secrets by examining whether their chemical contents contained controlled substances that cannot be claimed as confidential business information. However, the investigation depended on Samsung's cooperation and the company did not provide any data on the matter.
- The problem associated with workers' inability to understand the hazards and risks of the chemicals they handle has been repeatedly pointed out in other reports in 2011 and 2012, but improvements remain insufficient.

The problems described above are still ongoing. A 2023 study on workers' safety and health in electronics-related companies affiliated to Samsung found that while workers recognized that the chemicals they used were harmful, the majority of them had little knowledge of the specific chemicals and their hazards.<sup>14</sup> This is because health and safety training does not include this information and workers do not have access to it.

## TRAGIC EVENTS TRIGGER A FIGHT OVER RIGHT TO KNOW

To qualify for workers' compensation benefits for occupational diseases, the bereaved families of victims and survivors must prove that their illnesses are work-related, which requires information about the chemicals they were exposed to and their work environment. Samsung not only fails to provide victims with the information they have requested, but also proactively prevents them from accessing data that has already been submitted to the government and is public information. The company has been very aggressive in preventing Samsung workers from receiving government workers' compensation benefits.

In 2014, a worker surnamed Lee died of leukemia after working for more than 20 years on a semiconductor manufacturing line at Samsung Electronics.<sup>15</sup> Lee's family requested the disclosure of the working environment measurement report in a lawsuit, but Samsung filed a lawsuit to block it and won a ruling in its favor.

In 2017, Kim, a worker at Samsung Display for three years, was diagnosed with Hodgkin's lymphoma.<sup>16</sup> To petition for workers' compensation, Kim requested the Ministry of Employment and Labor to disclose the information in the working environment measurement report, which the Ministry accepted. However, Samsung Display filed a lawsuit to reverse the Ministry's disclosure decision.

These two tragic cases triggered an enormous fight over right to know in South Korea because both cases required information about workplace chemical use and exposure to obtain compensation.

## TRADE SECRETS UNDERMINE RIGHT TO KNOW

For years, both the electronics industry and the South Korean government have blocked compensation of sick workers by withholding key information pertaining to chemical use and exposure of workers, claiming that it is confidential business information.<sup>17</sup> Samsung's position has been noted by Hwang Sang-ki, father of Hwang Yumi, the first semiconductor industry victim publicly known in South Korea, *"First, it said it does not use chemicals, then it said it uses only safe chemicals and then has refused to disclose information on what kinds of chemicals are used."*<sup>18</sup> Samsung's obstruction violates the fundamental chemical safety principal of right to know and the human rights of workers. As noted by the United Nations Special Rapporteur on Toxics and Human Rights, *"... it is not legitimate to claim health and safety information about hazardous substances as confidential."*<sup>19</sup>



On March 6, 2018, the anniversary of Hwang Yumi's death, SHARPS and supporters march toward the group's sit-in protest site at Samsung's corporate headquarters in Seoul, with Hwang Sang-ki in front."

## WORKING ENVIRONMENT MEASUREMENT REPORT

In South Korea, companies dealing with hazardous chemicals must monitor their use in the production process, assess the work environment, and report this information to the Ministry of Employment and Labor (MOEL) every six months.

The working environment measurement report (WEM) contains various items that companies must report such as:

- Distribution of hazardous factors by work process
- Measurement plan for each process and hazardous factor subject to work environment measurement
- Status of chemical substances used by process
- Results of measurement of working environment by unit work place
- Evaluation of measurement results (whether exceeding legal exposure limits or not)
- Type of equipment used to measure and analyze samples
- Countermeasures including engineering, management, and personal hygiene measures
- Conditions and problems of workplace environment facilities

Samsung claims that the WEM contains sensitive information about manufacturing processes. However, the WEM does not describe proprietary recipes or procedures used in manufacturing processes. Instead, it provides health and safety information about chemical substances and their levels in the workplace so that facilities can take measures to reduce chemical exposure.

## LAWSUITS SEEK CHEMICAL INFORMATION

To obtain compensation for the illness and subsequent death of Mr. Lee, his surviving family members and SHARPS filed a petition with the Ministry of Employment and Labor and a lawsuit in the Daejeon District Court in 2014.<sup>20</sup> The suit aimed to make the Samsung Electronics working environment measurement reports public to obtain information about toxic chemical exposure at Samsung's semiconductor factory that may have contributed to Lee's illness and death. In 2017, the Daejeon District Court ruled in favor of the Ministry against release of the information. However, in 2018, the Daejeon High Court reversed that ruling and ordered the working environment reports to be released with personal information removed.<sup>21</sup> The Court decision also allowed third parties to view safety and health data, which is consistent with right to know.

In response, Kim and SHARPS filed a petition and lawsuit at the Cheonan office of the Ministry of Employment and Labor to compel the release of Samsung Display working environment measurement reports.<sup>22</sup> The Ministry agreed and ordered the reports to be released with personal information removed.

The need to provide work environment measurement information to claimants of workers' compensation benefits has also been highlighted by the Samsung Ombudsman Commission. The Commission was established as an external organization with three third-party experts as its members and worked from 2016 to 2021. Its Comprehensive Review Report, published in April 2018, stated that *"the types and amounts of chemicals used in each process, the results of work environment measurements (hazardous factors and their measurements), the main results of safety and health assessment reports, and data on workers' use of protective equipment can reveal important information about exposure to such substances, therefore, it is advisable to provide the information to current and retired workers, survivors who are entitled to insurance benefits under the Workers' Compensation Insurance Act, and representatives of workers or survivors when workers or survivors apply for workers' compensation or file workers' compensation lawsuits."*<sup>23</sup>

## SAMSUNG STRIKES BACK

Samsung aggressively moved to block the release of information ordered by the Ministry of Employment and Labor, claiming that it contained trade secrets.<sup>24</sup> The company filed lawsuits against the Ministry to block release of the information.<sup>25</sup> In 2018, Samsung requested the Ministry of Trade, Industry and Energy to check whether the working environment measurement reports contained information related to national core technologies.<sup>26</sup> The news media rushed to take sides with Samsung's position, claiming that the release of such information would benefit competitors, such as Chinese firms, and damage the South Korean economy.

The Ministry of Trade, Industry and Energy convened a close-door panel to review Samsung's request and consented to the company's claim. This decision effectively converted health and safety reports into a matter of national security.<sup>27</sup> The company also filed the same request with the Central Administrative Appeals Commission which decided in favor of Samsung's request to block information disclosure through the working environment measurement reports at semiconductor and display plants.<sup>28</sup> As a result, injured and sick workers will receive a heavily redacted report that removes key information such as chemical names, amounts used, intended uses, and the locations where they were measured. The decision effectively gutted worker right to know. Paek Do-myung, a professor emeritus at Seoul National University, summarized the situation noting, *"The issue is about which one is more important: people's right to know versus companies' trade secrets... But there cannot be any trade secrets that should be prioritized over workers' health and safety."*<sup>29</sup>

## BLOCKING RIGHT TO KNOW BECOMES LAW

In 2019, the National Assembly amended the Act on Prevention of Divulgence and Protection of Industrial Technology (Industrial Technology Act).<sup>30</sup> The new law quickly became known as the Samsung Protection Act. Not one Member of the National Assembly voted against the amendment.

Key characteristics of the amended Industrial Technology Protection Act are:

**Opaque decision-making:** The designation, modification, and disclosure of related information about national core technologies occurs through deliberation by a committee under the Ministry of Industry whose members are secret with a final decision by the Minister of Trade, Industry and Energy. (Article 9, Article 9-22, Article 7)

**Conflicts with existing law:** The amended law contradicts the purpose of the Information Disclosure Act of public institutions, which is “to ensure people’s right to know.”<sup>31</sup> In contrast to normal disclosure requirements for public agencies, the amended Industrial Protection Act requires public agencies to keep all information related to national core technology secret. The Act does not contain any exemption for disclosure of information involving threats to human health and the environment. (Article 9-2)

**Vague scope:** The scope of “*information on national core technology*” specified as non-disclosure targets is not clear. As a result, companies can claim that all information is related to national core technology and therefore must be kept secret. (Article 9-2)

**Confines use of information:** Even legally obtained information is prohibited from being used or disclosed for any other purpose, so the scope of the prohibition is extremely broad. This prohibits the disclosure of information claimed as industrial technology for public interest purposes and includes criminal punishment and punitive damages. Note that the scope of ‘industrial technology’ as defined by this law is significantly broader than that of ‘national core technology.’ (Article 14-8)

**Empowers an intelligence agency to act outside of judicial process:** If the Act is likely to be violated or is violated then the head of an institution possessing the national core technology must immediately report the situation to the Minister of Trade, Industry and Energy and the head of an intelligence investigative agency. The report can include a request for “*necessary measures*.” The intelligence agency is then obligated to investigate and take these “*necessary measures*.” (Article 15)

## EXAMPLES OF PROHIBITED INFORMATION RELEASE

The independent *Kyunghyang* newspaper reported examples of information released by the Ministry of Employment and Labor that would be prohibited under the amended Industrial Technology Protection Act:<sup>32</sup>

- An analysis of six out of 50 photosensitive agents used in Samsung Electronics’ Giheung plant in 2009 found benzene in all of them.
- In 2010, benzene continued to be used at Samsung’s Giheung plant, but the company did not conduct work environment measurements.
- In a six-month period in 2009, a total of 46 gas detector alarms went off at Samsung’s Giheung plant, indicating high concentrations of toxic gas, but workers were not evacuated.
- In 2013, a gas detector was installed in an incorrect location at Samsung’s Giheung plant so that a leak of toxic gas would not be found.
- In 2013, there were more than 2,000 violations of the Occupational Safety and Health Act at Samsung’s Hwaseong plant.

The updated law places broad-ranging constraints on the disclosure and use of information allegedly related to national core technologies and has strengthened penalties for the leaking of this information.<sup>33 34</sup> Due to the Industrial Technology Protection Act a vast array of information is now claimed as secret including:

- Possible harms to safety in the workplace.
- Epidemiological investigation reports investigating the relationship between disease and the working environment.
- Schematic structure of the clean room already disclosed in theses and books.
- Hazardous environment information to which cleaning workers unrelated to the technology were exposed.
- Working hours of workers applying for workers’ compensation.

The 2022 Samsung Sustainability Report mentions right to know only once in its 111 pages in the section describing national core technology.<sup>35</sup> However, the report does not explain how the company actions to designate WEM as national core technology undermines right to know. Instead, the report promotes national core technology as a “*sustainability*” feature involving security even while their sick workers cannot obtain important information for government compensation. In the 2023 Samsung Sustainability Report, “*right to know*” does not appear.



In 2018, Members of South Korea’s National Assembly appear with SHARPS and civil society representatives to call for revision of the Industrial Technology Protection Act. The large sign says, “*Press conference calling for the revision of the Industrial Technology Protection Act to protect the people’s right to health.*”

## LAWMAKERS TRY TO CORRECT THE MISTAKE AND ALMOST MAKE IT WORSE

In February 2020, 15 members of the National Assembly publicly apologized for having voted for the amendment that turned the Industrial Technology Protection Act into the “*Samsung Protection Act.*”<sup>36</sup> Eight months later, lawmakers of the then-governing Democratic Party proposed an update to the amended law that would make it even worse. Their proposal would have punished, “*the act of using and disclosing industrial technology without the consent of the institution.*” In other words, a sick Samsung worker that needed information to obtain compensation would first be required to get Samsung’s consent and without it, any release of that information would be a crime. To make their intent clear, the lawmakers called their proposal, the “*Samsung Electronics National Core Technology Leakage Protection Act.*”<sup>37</sup> Representative Ko Min-jung of the Democratic Party served as the leading proponent of this proposed law. However, in 2021, Representative Ko withdrew the proposal, citing further dialogue with civil society organizations who strongly opposed the measure.<sup>38</sup>

## ANOTHER LAW TO PROTECT HIGH-TECH ENACTED

In 2022, lawmakers passed the National Advanced Strategic Industry Act (formally known as Special Measures Act on Strengthening and Protecting Competitiveness of National High-Tech Strategic Industry). The law focuses primarily on regulating dissemination of technologies of national strategic importance to foreign countries and providing government support to designated industries to ensure stable supply chains. Semiconductor technologies covered under the Industrial Technology Protection Act are also likely to be deemed National High Technologies. The technologies covered under the new law are also defined as national core technologies as stipulated by the Industrial Technology Protection Act. This means that all information on technologies designated under the new law will also be subject to restrictions on right to know codified in

the Industrial Technology Protection Act. As a result, the National Advanced Strategic Industry Act significantly expands the scope of restrictions on right to know under the Industrial Technology Protection Act.

## RIGHT TO KNOW ACT PROPOSED

In September 2022, some Democratic Party lawmakers proposed the Right to Know Act which would strengthen right to know provisions in three laws: Occupational Safety and Health Act, Industrial Technology Protection Act, and the National Advanced Strategic Industry Act.<sup>40 41</sup>

The proposed provisions included:

- Obligations of employers to disclose safety and health data for former and current workers
- Improving the scope of information disclosure of national core technologies to prevent the arbitrary concealment of information
- Repeal of national core technology linkage provisions in relation to designation, modification, and cancellation of strategic technologies

The proposal failed to move forward.

## A BAD LAW MADE WORSE

In December 2022, the National Assembly passed the Partial Amendment to the Act on the Prevention and Protection of Industrial Technology Leakage, which was introduced by the Committee on Industry and Commerce as a bundle of bills from various lawmakers.<sup>42</sup> While the old law required intent to harm the company by leaking information, the amended law allows for punishment based on mere recognition of the potential harm. National security was cited as the reason for the change. No measures in the revised law remedy how its provisions further undermine right to know.

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## PHOTOGRAPHY

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# ANNEX 4. CHARACTERISTICS OF THE ELECTRONICS INDUSTRY AND ITS RELATION TO CHEMICAL SAFETY

## KEY POINTS IN THIS ANNEX

1. The electronics industry is chemically intensive, using hundreds of chemicals that cause harm during production, expose consumers to toxic chemicals during use, and release toxic chemicals when products become electronic waste.
2. The relationship between women and chemical safety is highly relevant to the electronics sector due to its chemical intensity and the significant number of women working in the electronics industry.
3. Key elements of women and chemical safety include: lack of information; the need to include gender aspects of environment assessments; how different physiology affects exposures and impacts; unique time periods of susceptibility; different types of occupational exposures; exposures through different types of consumer products; and unequal decision-making on chemical safety issues.
4. The health consequences for women working in the electronics industry include kidney cancer, lymphoma, leukemia, spontaneous abortion, breast cancer, cancers of the reproductive system, endometriosis, and menstrual aberration, among others.
5. In the 1990s, the US semiconductor industry outsourced harm to Asia upon discovering that female electronics workers suffered a miscarriage rate twice that of the general population, attributed to their on-the-job exposure to ethylene glycol ethers.
6. Electronics production routinely violates key chemical safety principles such as precaution, prevention, right to know, polluter pay obligations, substitution, liability and compensation, and others.
7. In 2019, the UN Special Rapporteur for Human Rights and Toxics presented 15 principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights.

## THE ELECTRONICS INDUSTRY IS CHEMICALLY INTENSIVE

Electronics are blockbuster consumer products, but their manufacture relies on the use of hundreds of chemicals.<sup>1,2,3</sup> Many of these substances are hazardous and lack comprehensive health and safety information due to weak regulatory policies. This causes harm in production, exposes consumers to toxic chemicals during use, and releases toxic chemicals when products become electronic waste. Hazardous chemicals in electronics have also become an international issue of concern under a global policy agreement led by the United Nations Environment Programme (please see Annex 5).

Unfortunately, much of the information we have about the human health harms of hazardous chemicals comes from worker illness and death. A 2017 report commissioned by the International Labor Organization (ILO) estimates that over 2,780,000 workers globally die from unsafe or unhealthy conditions of work annually.<sup>4</sup> The UN Special Rapporteur on Toxics and Human Rights noted that, *“Over 80% of the deaths are from occupational diseases. Approximately half of this figure comes from exposure to toxic chemicals, pesticides, radiation and other hazardous substances, and this may be underestimated.”*<sup>5</sup> In 2019, the UN Special Rapporteur on Toxics and Human Rights presented a report to the Human Rights Council on human rights principles to protect workers from toxic exposures. The report notes that, *“Despite clear human rights obligations relating to the protection of their health, workers around the world find themselves in the midst of a crisis: it is estimated that one worker dies at least every 30 seconds from exposure to toxic chemicals, pesticides, radiation and other hazardous substances.”*<sup>6</sup> A 2021 ILO report noted, *“Every year more than 1 billion workers are exposed to hazardous substances including pollutants, dusts, vapors and fumes in their working environments.”*<sup>7</sup> Threats to human health in electronics production have been documented in the scientific literature. Severe illnesses including cancer, lung disease, reproductive disorders, congenital anomalies in offspring, and musculoskeletal problems — have been identified in manufacturing facilities located in China, Malaysia, South Korea, and elsewhere.<sup>8,9,10,11,12,13,14,15,16</sup>

Communities are also affected by pollution from electronics manufacturing. For example, the most concentrated number of known toxic sites in the US (Superfund sites) are in Silicon Valley, California – the original global capital of electronics production.<sup>17</sup> While not known widely, similar toxic sites exist in other locations. The victims of poor chemicals management in the electronics sector are largely out of public view and difficult to access. This is due to strong corporate interest in concealing this dark side of the industry and the industry’s strident opposition to authentic, independent trade unions which could lead to the improvement of transparency and advocacy for human health protections. This means that the true cost of the electronics industries’ products is substantially underestimated, and costs are therefore externalized onto workers and communities as part of key vulnerable populations. The following three case studies describe how the electronics industry pollutes the environment when operating internationally and nationally.

### CASE STUDY #1: SAMSUNG POLLUTION OF WATERWAYS IN THE US

Recently, Samsung Electronics has water pollution issues that remain absent from its sustainability reports, despite media coverage. In 2021, Samsung Semiconductor in Austin, Texas, spilled approximately 250,000 liters of toxic wastewater into a river tributary.<sup>18</sup> Regulators were convinced by the company’s claim that the discharge was an unavoidable “*Act of God*” and the company paid no fines.

In 2022, the same Samsung factory released nearly 3 million liters of toxic wastewater into the same river tributary and the spill went on for more than three months.<sup>19</sup> Regulators noted that they “*found virtually no surviving aquatic life within the entire tributary.*”<sup>20</sup> Paradoxically, in the same year, Samsung received a state environmental award and the Governor of Texas praised the company and other award winners for “*their time, their talent, their treasure to the high calling of protecting our state’s natural resources.*”<sup>21</sup> The case is still under investigation by regulators.



Map showing Samsung Semiconductor’s spill in Texas, USA, that continued for more than three months.

As with its Bac Ninh plant, the company released large amounts of toxic wastewater into the environment and thus far has shirked any accountability.

## CASE STUDY #2: RCA POLLUTION OF GROUNDWATER IN TAIWAN

RCA, of the USA, initiated television production in Taiwan in the 1960s. The factory underwent several ownership changes until 1992 when it was closed. Two years later, trichloroethylene and other toxic substances were found in the soil and groundwater of the factory.<sup>22 23</sup> Most of the workers at the plant were women and together with the assistance of the Taiwan Association for Victims of Occupational Injuries (TAVOI), they documented a variety of cancers, miscarriages, and other diseases among hundreds of former workers. Further investigations showed that company management was aware of the toxic chemical contamination and concealed the information when the site was sold in 1992.



Former RCA workers in front of the Taiwan High Court during a trial with a banner that says, "We are still alive and never give up in this trial!"

In 1998, the Taiwan EPA designated the former RCA plant as a site of "permanent contamination."<sup>24</sup> Scientists and lawyers identified thirty-one toxic substances that had been used in the factory and polluted the groundwater. The substances included trichloroethylene and benzene. Workers used ineffective paper masks or no protection when handling these substances under conditions of very poor ventilation. To cut corners, RCA sourced water from the groundwater polluted with its own toxic chemical discharges for daily use by its own employees, including drinking, cooking, and hygiene maintenance. Trichloroethylene levels in water used by employees were more than 1,000-fold higher than drinking water limits. In contrast, factory management secretly consumed bottled water.

Due to changes in ownership, lawsuits became complicated, involving four foreign companies, all anxious to shift liability and avoid compensation. As the court cases unfolded over decades, some milestone victories for the workers emerged. The court ruled in favor of the liability of all foreign companies in 2017. In 2018, the Supreme Court upheld the ruling, affirming the causal link between exposure and serious illnesses including cancer. In 2019, a second group of workers won their case which recognized potential irreversible DNA damage and the right to damages for anxiety and feelings of uncertainty in workers who had not yet developed cancers. In 2022, the Supreme Court ruled that former workers had a "right to health" and that the toxic chemical exposure might have violated constitutional rights even though a causal relationship with illness had not been established.<sup>25</sup>

This case study represents a classic case of foreign companies locating in countries with cheap labor and a lack of chemical regulatory infrastructure. RCA and the other companies externalized the costs of their operations, and secrecy about their pollution was key to its continued release.

## CASE STUDY #3 FISH KILL NEXT TO SAMSUNG ELECTRONICS IN SOUTH KOREA

On October 31, 2014, a fish kill occurred in the rainwater runoff stream next to Samsung Electronics in the city of Suwon, South Korea.<sup>26</sup> Environmental organizations<sup>27</sup> formed a coalition with human rights<sup>28</sup> and local organizations to respond to Samsung.<sup>29</sup> Water samples were taken and provided to a laboratory for testing. The samples tested by civil society organizations showed toxic chemicals including cyanide and chloroform.<sup>30</sup> However, Samsung's own testing did not find any toxic chemicals.<sup>31</sup>



Activists call on Samsung to take responsibility for the killing of fish. The individual letters say, "Samsung Electronics should take responsibility." The banner says, "Fish Kill. Samsung should take responsibility!"

Civil society organizations saw the difference in the testing results as problematic and called on Samsung to disclose the list of chemicals it uses. The city of Suwon, experts, and civil society organizations formed a public-private partnership to conduct their own investigation. Samsung refused to cooperate with the inquiry.

During the investigation, experts from the public-private partnership determined that the fish kill was the result of a chemical spill.<sup>32</sup> They recommended that the city of Suwon prepare a response plan for chemical accidents.

Eventually, the city of Suwon decided to create an ordinance granting citizens the right to know about chemicals. Suwon became the first city in South Korea to create the Suwon City Chemical Accident Response and Community Right to Know Ordinance.<sup>33</sup> The ordinance covers prevention and response to small and large chemical accidents. Local civil society organizations, the city of Suwon, and businesses established a chemical accident management committee to discuss risks, responses, and management plans.<sup>34</sup> The work of this committee is ongoing. A chemical information center was established to provide residents with a list of chemicals in the nearby facilities and their emissions.<sup>35</sup>



On October 31, 2014 at about 8 am, fish were killed due to the release of toxic wastewater from the wastewater treatment facilities at Samsung Electronics' production hub. The wastewater was released into Woncheon-ri creek through a storm drain upstream of the Samsung Jungang Bridge.

## WOMEN AND CHEMICAL SAFETY

The relationship between women and chemical safety is a topic that has been largely ignored in policy-making, but it is essential for proper management of chemicals and wastes and highly relevant in the electronics sector.<sup>36 37</sup> To achieve chemical safety, everyone must have the same rights but women are usually disproportionately impacted by toxic substances and wastes, and have less access to participation in decision-making.

Basic elements of women and chemical safety include:

**Lack of information:** Knowledge of exposure routes and the true impacts of chemical exposures on women are difficult to determine due to the scarcity or complete absence of gender-disaggregated data. As a result, current exposure standards are typically based on an assumed average male height and body weight, thereby reducing protection for both women and children. In addition, with the number of women in certain occupations being unknown, connections to occupational health impacts in women cannot be determined. A better understanding of gender-dependent hazards will improve the design and implementation of protective and preventive measures.

**Environment assessments of and activities on chemicals and wastes usually ignore gender aspects:** This disparity hides differences in gender susceptibility to chemical exposure. To achieve better outcomes from chemicals management measures, as well as awareness-raising and capacity-building activities, it is sometimes crucial to address men and women differently. For example, information workshops addressing households are often attended by the male head of the family although often the women head of family should ideally have the information firsthand. This could lead to many recommendations not being implemented in the household (e.g., waste handling). Therefore, chemicals and waste projects should have a gender assessment before they start, gender sensitive indicators and activities, and a gender evaluation after they finish, to increase the effectiveness of the outcomes.

**Different physiology affects exposure and impacts:** Women and men have different hormone systems that influence a whole host of body functions from infancy through adolescence and adulthood. Throughout their lives, women are exposed to numerous harmful chemicals that can be transferred across the placenta during fetal development and through breast milk to their nursing infants. Exposures to chemicals that dissolve in fat are especially relevant in the gender context, given that women tend to have higher fat content. Exposures during fetal development can cause lifelong harm and increase the risks of such harmful effects as preterm births, birth defects, childhood, and adult diseases. Adverse effects can also be carried across multiple generations. A growing number of chemicals have been shown to exert multigenerational and transgenerational effects. Exposure to pregnant females not only impacts the offspring (F1) but also their offspring (F2) and even the subsequent generation (F3).

**Unique time periods of susceptibility:** Men and women have different time periods during which the impacts of chemical exposure can be especially high. For women, these time periods include adolescence, pregnancy, lactation, and menopause.

**Different types of occupational exposures:** Women and men both experience occupational exposures to chemicals, but these may differ depending on region, occupation, and access to information. For example, women working in agriculture in some countries can represent the majority of workers involved in pesticide spraying. In some countries, women working in rural areas are exposed to chemicals due to the traditional practice of burning agricultural stubble and waste in preparation for planting. Beauty salon workers are overwhelmingly women, and are often exposed to chemicals in the products they handle. Women are also exposed at home while using cleaning products, household pest control products, washing pesticide-contaminated clothing, the storage of pesticides and spray equipment in kitchens, or dealing with wastes. In the Vietnamese electronics industry, 60% of the workers are women working on assembly lines.<sup>38</sup> Vietnamese regulators have noted that, “*Women mostly do not hold technical or management positions. And senior management positions in the industry are held by foreigners.*”<sup>39</sup> Women typically work at the lowest level in global production systems. This feminization of poverty leaves women more susceptible and vulnerable to toxic chemical exposure, putting their health at risk.

**Exposures to chemicals in different types of consumer products:** Women use a different spectrum of consumer products than men. For example, women use substantially more personal care products than men and often engage in house work using cleaning products containing chemicals. All these, together with their use of other products, result in different types of chemical exposures.

**Decision-making on environment and chemical safety issues is not equal:** Women generally have more limited decision-making power, and this is consistent with underrepresentation in law-making bodies and higher-level government positions, as well as involvement in decision-making at the household level. The role of women as educators, trainers, and decision-makers in addressing chemicals and waste problems is both underestimated and underutilized. There are wide disparities between women and men in access to education, resources, social protection, financing, and capacity-building and training, as well as technical knowledge and skills. This creates different exposure scenarios, impacts empowerment, and undermines the development of gender-responsive policies.

The topic of women and chemical safety is highly relevant to the electronics sector because female workers have played a prominent role in electronics manufacturing beginning in the early 20th century and helped make it a mass production industry due to low wages. As an engineering wiki notes, *“The electronics industry was the largest employer of women in the United States by 1960.”*<sup>40</sup>

In the US, an investigation of 32,000 worker deaths in IBM between 1969 and 2001, *“found excesses of brain, kidney, and pancreatic cancer, along with melanoma, in male manufacturing workers. Female workers had higher-than-expected numbers of deaths from kidney cancer, lymphoma, and leukemia.”*<sup>41</sup> The company subsequently tried to block the publication of these results. Years later, another study found solvent exposure among women working in the electronics industry during the first trimester of pregnancy was significantly associated with spontaneous abortion.<sup>42</sup>

In subsequent decades, the electronics industry moved to Latin America and Asia where it rapidly expanded by using complicated supply chains involving numerous small sub-contractors — many of whom have even less capacity for chemicals management than their larger partners. In Asia, women became the prime labor force because the industry noted a need for cheap, patient, and obedient workers and presumed that young women would be, *“accustomed to life in a traditional patriarchal atmosphere and would have already learned to be respectful of authority.”*<sup>43</sup> By the mid-1970s, there were about one million workers in electronics assembly lines in Asia and 90% of them were women.<sup>44</sup> The industry has substantially grown since then, and two places that provide examples of its consequences for women are Taiwan and South Korea (please also see Case Study #2 above and Outsourcing harm from the US to Asia below).

In the 1970s many international companies began electronics manufacturing in Taiwan. Young women joined the industry and subsequently suffered from fatal occupational diseases. These include deaths due to trichloroethylene exposure at the Philco-Ford and Mitsumi factories.<sup>45</sup> In the 1990s, regulators found RCA had polluted groundwater with trichloroethylene, perchloroethylene and other toxic chemicals. Studies of former workers and community residents found an increased risk of liver and breast cancers.<sup>46</sup>

In South Korea, an analysis of epidemiological data found evidence indicating reproductive risks to women from semiconductor fabrication jobs including spontaneous abortion, congenital malformation, and reduced fertility.<sup>47</sup> A subsequent examination of reproductive risks among female high-tech electronics workers aged 20 – 39 found a significantly higher risk for spontaneous abortion and menstrual aberration.<sup>48</sup> A study of leukemia and non-Hodgkin lymphoma (NHL) cases from the Giheung Samsung plant reported to SHARPS, identified 17 affected workers with 11 of them women — all 30 years-old or younger.<sup>49</sup>

The issue of women and chemical safety is also highly relevant to the waste part of the electronics lifecycle (e-waste). Approximately 54 million tons of e-waste are generated each year, and this is predicted to double by 2050 if current practices continue.<sup>50</sup> Large numbers of women and children work in e-waste collection and processing, involving burning cables, acid baths, breaking equipment open, and breaking apart soldered components. This results in a variety of toxic chemical exposures, especially in developing countries, *“where most informal and primitive e-waste recycling occurs, environmental exposure to lead, cadmium, chromium, polybrominated diphenyl ethers, polychlorinated biphenyls, and polycyclic aromatic*

*hydrocarbons is prevalent at high concentrations in pregnant women and young children.”<sup>51</sup> Women exposed to toxicants contained in e-waste, “may suffer from anemia, fetal toxicity, hormonal effects, menstrual cycle irregularities, endometriosis, autoimmune disorders, and cancers of the reproductive system.”<sup>52</sup>*

## OUTSOURCING HARM FROM THE US TO ASIA

A clear historical example of outsourcing harm from the US to Asia occurred in the 1980s when the US semiconductor industry discovered that the rate of miscarriage in women workers in the industry was twice that of the general population. The data pointed to ethylene glycol ethers (EGEs) as the likely cause. These substances were cheap and used in photo resists and in solutions for cleaning chips during the manufacturing process.

In 1993, the US Occupational Safety and Health Administration proposed low regulatory exposure levels for EGEs resulting in a phase-out by US companies. Consequently, these companies turned to South Korean companies for chip supply, entering into contracts with Samsung and Hyundai Electronics (now SK Hynix). In 2009, testing data from samples taken at these two companies found EGEs in more than half of the samples. Followup testing in 2015 showed negative results for EGEs at the two large companies but found EGEs in samples from a smaller South Korean company. As reported in *Bloomberg Business Week*, the US industry, “*was in effect trading exposure in U.S. workers for exposure in women overseas.*”<sup>53</sup> A subsequent peer-reviewed scientific study by South Korean scientists published in 2015 showed high rates of miscarriage and menstrual aberration in women working in the high-tech electronics industry.<sup>54</sup> The authors noted that the data indicated, “*continued exposure to reproductive hazards.*”

In 2017, the South Korean government recognized infertility in a former female semiconductor worker as an occupational illness for the first time. Ms. Kim had worked at Samsung Semiconductor for 15 years and suffered a miscarriage and other health issues. In its decision, the Korea Workers’ Compensation & Welfare Service (K-COMWEL) noted that Kim was exposed, “*...to organic compounds such as ethylene glycol...*”<sup>55</sup>



Ms. Kim at home with her daughter.

## THE ELECTRONICS INDUSTRY VIOLATES CHEMICAL SAFETY AND HUMAN RIGHTS PRINCIPLES

Electronics production routinely violates key chemical safety principles such as precaution, prevention, right to know, polluter pays, substitution, liability and compensation, and others. There are also strong connections to key chemical safety principles in the area of human rights. In 2011, the UN Human Rights Council endorsed the UN Guiding Principles on Business and Human Rights.<sup>56</sup> In 2022, the UN General Assembly declared access to a clean and healthy environment a universal human right.<sup>57</sup> Also in 2022, the International Labor Organization (ILO) included “*a safe and healthy working environment*” as a fundamental principle and right at work.<sup>58</sup>

Respecting human rights “*requires*” that businesses avoid “*causing or contributing to*” adverse human rights impacts through their activities and address such impacts when they occur. Businesses should “*prevent or mitigate*” impacts “*directly linked*” to operations, products, or services by their business relationships, even if they have not contributed to those impacts.<sup>59</sup>

In 2019 at the UN General Assembly, the UN Special Rapporteur for Toxics and Human Rights presented 15 principles to respect and protect workers from toxic occupational exposures and to provide remedies for violations of rights.<sup>60</sup> These principles include the following:

1. Everyone must be protected from exposure to toxic substances at work.
2. States have a duty to protect the human rights of workers through the prevention of exposure to toxic substances.
3. Business enterprises have a responsibility to prevent occupational exposures to toxic substances.
4. Hazard elimination is paramount in preventing occupational exposures.
5. Duties and responsibilities to prevent the exposure of workers to toxic substances extend beyond borders.
6. States must prevent third parties from distorting scientific evidence or manipulating processes to perpetuate exposure.
7. Protecting workers from exposure to toxic substances protects their families, their communities and the environment.
8. Every worker has the right to know, including to know their rights.
9. Health and safety information about toxic substances must never be confidential.
10. The right to safe and healthy work is inseparable from freedom of association, the right to organize and the right to collective bargaining.
11. Workers, representatives of workers, whistle-blowers and rights defenders must all be protected from intimidation, threats and other forms of reprisals.
12. Workers, their families and their communities must have immediate access to an appropriate and effective remedy, which should be available from the time of exposure.
13. Workers or their families should not bear the burden of proving the cause of their illness or disability to access an effective remedy.
14. Depriving workers of their right to safe and healthy work should be a crime.
15. States should ensure accountability for cross-border cases of workers harmed by occupational exposure.

For more information about this topic, please see Chapter 4.

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# ANNEX 5. HAZARDOUS CHEMICALS IN ELECTRONICS ARE A GLOBAL ISSUE OF CONCERN

## KEY POINTS IN THIS ANNEX

1. In 2009, more than 100 countries agreed that hazardous chemicals in the lifecycle of electrical and electronic products was a global issue of concern.
2. Important policy recommendations for actions on electronics emerged in 2011 at a UN expert group meeting with representatives of 32 governments, industry, and public interest NGOs. The recommendations cover design, production and use, and waste.
3. In 2012, the American Public Health Association passed a consensus resolution entitled, *“Improving occupational and environmental health in the global electronics industry.”* The resolution advocates for right to know and reduction of toxic chemical use.
4. Delegates at the 3rd International Conference on Chemicals Management (ICCM3) made hazardous chemicals in electronics part of a Global Plan of Action of a UN agreement covering all chemicals.
5. At the 4th International Conference on Chemicals Management (ICCM4) in 2015, more than 100 countries once again encouraged use of the 2011 recommendations on electronics along with other measures to improve occupational health and safety in the electronics industry.
6. Delegates from more than 100 countries adopted the Global Framework on Chemicals at the 5th International Conference on Chemicals Management (ICCM5) in 2023. Delegates agreed to continue work on hazardous chemicals in electronics and other issues of concern under the new Global Framework and make further decisions at ICCM6.

## INTRODUCTION

This annex describes how hazardous chemicals in electrical and electronics products have become a global issue. It includes key decisions and recommendations under a UN agreement and an important resolution from a body of health professionals.

## A UN AGREEMENT ON CHEMICALS

The Strategic Approach to International Chemicals Management (SAICM) was a global policy agreement led by UN Environment to promote chemical safety. In adopting SAICM in 2006, governments and other participants in the International Conference on Chemicals Management (ICCM) agreed that improved measures are needed to prevent harmful effects of chemicals on the health of children, pregnant women, fertile populations, the elderly, the poor, workers and other vulnerable groups as well as susceptible environments.<sup>1</sup> They noted that some progress has been made in chemicals management, but declared that progress has not been sufficient globally, and that the environment worldwide continues to suffer from air, water and land contamination that impairs the health and welfare of millions.

## HAZARDOUS CHEMICALS IN ELECTRONICS BECOMES A GLOBAL ISSUE IN 2009

In 2009 at the 2nd International Conference on Chemicals Management (ICCM2), more than 100 countries agreed with a proposal by the African region and Peru that hazardous chemicals in the lifecycle of electrical and electronic products should be designated as a global emerging policy issue.<sup>2</sup> The ICCM2 decision noted the problems with electronic waste and the need to phase-out hazardous chemicals and consider all stages of the product lifecycle. Delegates at ICCM2 called for a workshop to *“identify and assess where issues relating to the sound management of chemicals arise during the lifespan of electrical and electronic products”* and to make recommendations for dealing with them. The workshop was subsequently held in Vienna, Austria in 2011.

## IMPORTANT POLICY RECOMMENDATIONS FOR ACTION EMERGE IN 2011

In 2011, the United Nations Industrial Development Organization (UNIDO), and the secretariats of the Basel and Stockholm Conventions held the electronics lifecycle workshop in Vienna, Austria. The Vienna meeting included 32 governments<sup>1</sup> (including Vietnam), the industry, and public-interest NGOs. The

participants represented countries where design, production, and electronic waste dumping occur, making the recommendations particularly robust. The Vienna meeting produced an extremely important comprehensive set of global policy recommendations on chemicals in electronics.<sup>3</sup> The recommendations cover upstream (design), midstream (production and use) and downstream (wastes) parts of the lifecycle. Some key recommendations on the electronics production include:

- Governments, intergovernmental organizations, and non-governmental organizations including the private sector and others should encourage and promote sustainable production and pollution prevention by using cleaner production techniques, waste minimization, and safer substitutes whenever available.
- Producers and manufacturers should prioritize reduction of exposure to chemicals, primarily by elimination or substitution of the most hazardous substances and production processes, especially those processes involving worker and community exposure to substances of concern. In the present context, substances of concern include those that are persistent, bioaccumulative and toxic and/or those that are carcinogens, mutagens, reproductive or developmental toxins, neurotoxins, neurodevelopmental toxins, respiratory toxins, immunotoxins, organ system toxins, and/or endocrine disrupting compounds.
- Specific protection and prevention measures:<sup>4</sup>
  - The employer should ensure that the risk from a hazardous chemical agent to the safety and health of workers at work is eliminated or reduced to a minimum.
  - In applying paragraph 1, substitution should by preference be undertaken, whereby the employer should avoid the use of a hazardous chemical agent by replacing it with a chemical agent or process which, under its condition of use, is not hazardous or less hazardous to workers' safety and health, as the case may be.
  - Where the nature of the activity does not permit risk to be eliminated by substitution, the employer should ensure that the risk is reduced to a minimum by application of protection and prevention measures. These will include, in order of priority:
    - design of appropriate work processes and engineering controls and use of adequate equipment and materials, so as to avoid or minimize the release of hazardous chemical agents which may present a risk to workers' safety and health at the place of work;
    - application of collective protection measures at the source of the risk, such as adequate ventilation and appropriate organizational measures;<sup>4</sup>
    - where exposure cannot be prevented by other means, application of individual protection measures including personal protective equipment.
- Environmentally unsound technologies and products that are prohibited or cause severe environmental degradation or are found to be harmful to human health should not be transferred to other countries.<sup>5</sup>
- Information on health and safety for humans and the environment for the substances used in manufacturing of electronic and electrical products and present in products should not be considered confidential.
- If companies transfer technologies and products to subcontractors they should be environmentally sound and the companies should ensure that the subcontractors have the capacity to protect workers and the surrounding communities before making the transfer.
- Producers and manufacturers, with oversight by the government and the full participation of worker and community representatives should ensure (and report the results to appropriate governmental authorities of):
  - Comprehensive, occupationally relevant health surveillance for all of its workers;
  - Comprehensive ongoing industrial hygiene and environmental monitoring to measure the release and exposure to all hazardous materials used in manufacturing and production;
  - Access to these data (and adequate funding) to ensure comprehensive and independent epidemiological assessments of worker health;

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<sup>1</sup> The participants included 32 government representatives from both electronics manufacturing countries (China, Czech Republic, Germany, Indonesia Japan, Malaysia, Thailand, and Vietnam) and countries affected by electronic waste (China, Colombia, Cote d'Ivoire, Ethiopia, Ghana, Indonesia, Malaysia, Mozambique, Nigeria, Peru, Philippines, Tanzania, Thailand, Vietnam, and Zambia.)

- Action plans to preserve and protect worker health based on these data.
- In situations where pollution from electronics production facilities has been found in surrounding communities, the manufacturers and producers should cooperate with health researchers and investigators to assess and control adverse health impacts, especially with respect to vulnerable populations.
- Governments should guarantee that workers have the right to collectively bargain as a fundamental human right, guaranteed by the Universal Declaration of Human rights (adopted in 1948 by the United Nations; the right to bargain collectively is subsumed under the rights to freedom of association and the right to organize into a trade union — see Articles 20 and 23). The right to organize and bargain collectively is explicitly covered under International Labor Organization Convention 98 adopted in 1949. Pursuant to these rights, all workers involved in each stage of the life cycle of electronics production should have the right to:
  - Form unions and to organize for self-protection;
  - To form health and safety committees;
  - To receive training to develop the capacity to monitor and enforce effective health and safety protections in the workplace;
  - To refuse unsafe or unhealthy work; and the right to be protected from retaliation for exercising those rights (right-to-act and “whistle-blower” protection) (ILO, 1998);<sup>6</sup>
- Governments are encouraged to develop and implement effective liability and compensation legislation for the victims of toxic exposures in the workplace and the community. Given that the electronics industry is characterized by multiple chemical exposures to chemicals of concern, many of which are in addition inadequately tested and regulated, and the frequent changes in process chemicals, it is particularly important to develop compensation systems funded by the employers that are designed to address these inherent challenges to fair compensation by developing mechanisms that assure that workers harmed by such exposure qualify for adequate and timely compensation, as well as treatment and rehabilitation.

## AMERICAN PUBLIC HEALTH ASSOCIATION RESOLUTION ON OCCUPATIONAL HEALTH IN THE ELECTRONICS INDUSTRY

The American Public Health Association (APHA) was founded in 1872 and is a leading body of health professionals from 40 countries, including physicians, nurses, and researchers. In 2012, APHA passed a consensus resolution entitled, *“Improving occupational and environmental health in the global electronics industry.”*<sup>7</sup> The resolution describes how the rapid growth of the industry has been accompanied by increased use of toxic substances and adverse health outcomes — particularly in Asia. Among its key recommendations, APHA included the following:

- The public health community should promote and disseminate independent research on the risks associated with the electronics industry.
- Manufacturers of electronics should provide workers and surrounding communities with information on their use and release of chemicals and other potential sources of exposures, consistent with the fundamental public health principle of right to know.
- Manufacturers of electronics should provide workers with access to exposure monitoring protocols and results, as well as medical records prepared and/or maintained by the manufacturers or their contractors.
- Manufacturers of electronics should reduce the use of toxic substances by implementing designs to eliminate or substitute the most hazardous compounds and production processes with safer chemical and nonchemical alternatives that reduce the potential for harm to human health and the environment.
- Manufacturers of electronics should ensure that subcontractors have the capacity to protect workers and the surrounding communities before transferring technologies and manufacturing processes to them and continue to monitor subcontractors during manufacturing to ensure protection of worker and community health.

## HAZARDOUS CHEMICALS IN ELECTRONICS BECOMES PART OF SAICM'S GLOBAL PLAN OF ACTION

In 2012, delegates at the 3rd International Conference on Chemicals Management (ICCM3) made hazardous chemicals in electronics part of SAICM's Global Plan of Action.<sup>8</sup> The African region pushed for this action with strong support from other countries. The result included adding 13 items to SAICM's Global Plan of Action tackling topics such as green design, environmentally sound manufacturing, and awareness-raising. ICCM3 also encouraged use of the Vienna meeting recommendations and agreed to create an international set of best practice resources. These best practices include:

- Tools that lead to progress in the development of designs that reduce and eliminate the use of hazardous chemicals in the production of electrical and electronic products
- Business standards and practices for tracking and disclosing the presence of hazardous chemicals in the manufacturing, use and end-of-life stages of electrical and electronic products
- Tools and information on potential safer substitutes for chemicals of concern in electrical and electronic product applications
- Green purchasing strategies of businesses and Governments
- Extended producer responsibility policies of businesses and Governments
- Provisional strategies and actions in design and manufacturing that should be implemented until elimination is possible or safer substitutes are available

## GLOBAL AGREEMENT THAT MORE WORK NEEDS TO BE DONE ON HAZARDOUS CHEMICALS IN THE ELECTRONICS LIFECYCLE

At the 4th International Conference on Chemicals Management (ICCM4) in 2015<sup>9</sup>, more than 100 countries once again encouraged use of the Vienna recommendations along with several other key points:

- The International Labour Organization (ILO) was invited to activate itself on worker safety issues related to production, waste management, and recycling.
- Advocacy, awareness, information, education, and communication about hazardous chemicals in the entire electronics supply chain for vulnerable groups and relevant stakeholders should begin by 2016.
- Original equipment manufacturers (OEMs) should develop and implement sustainable and effective electrical and electronic products take-back programs.
- OEMs should work with their supply chain to establish and implement industrial hygiene and environmental monitoring programs.
- OEMs should collect and provide health and safety information to workers on chemicals they are handling or exposed to in electrical and electronic products manufacturing.
- Procurement initiatives should be established that favor improved safety and sustainability profile of electrical and electronic products, including chemicals used in manufacturing.
- Synergize with SAICM's chemicals in products program to provide access to information on hazardous chemicals in the life cycle of electrical and electronic products.

## CRAFTING A NEW GLOBAL AGREEMENT

In 2002, when Heads of State called for the creation of SAICM, they set a goal that by 2020 chemicals would be used and produced in ways that minimize adverse effects on human health and the environment. As SAICM implementation progressed it became clear that continuing international work on global chemical safety would be needed beyond 2020. In 2015 at the 4th International Conference on Chemicals Management, delegates agreed to begin an intersessional process to formulate a new agreement that would be adopted in 2020. After an interruption due to the COVID-19 pandemic, the process resumed in 2022 and concluded in September 2023 at ICCM5.

The Global Framework on Chemicals was adopted on 30 September 2023 in Bonn, Germany, as an outcome of ICCM5.<sup>10</sup> Ministers, heads of delegation, and stakeholder leaders also adopted the Bonn Declaration for a Planet Free of Harm from Chemicals and Waste.<sup>11</sup>

The Bonn Declaration notes that, “*Chemical pollution hinders the enjoyment of a clean, healthy and sustainable environment and of the right to a safe and healthy working environment.*” The Declaration commits governments, the industry, and public interest stakeholders to a variety of measures including, “*Protecting and respecting human rights for the benefit of present and future generations*” and “*Promoting decent, safe, healthy and sustainable work throughout value and supply chains.*”<sup>12</sup>

At ICCM5, delegates agreed in resolution V/5 to carry hazardous chemicals in electronics and other issues of concern forward as part of the Global Framework until ICCM6 in 2026 when the Conference will determine their path.<sup>13</sup> Meanwhile, the decision strongly encourages all relevant stakeholders to continue work on these issues and invites relevant IOMC organizations to provide a progress report at ICCM6.

The electronics issue of concern already has a thoughtful, relevant list of recommendations established by a UN expert group in 2011 that were subsequently welcomed at global SAICM meetings in 2012 and 2015.<sup>14</sup> However, there has been limited effectiveness in developing and implementing a work program to carry them out. Moving forward, the existing recommendations should provide a roadmap for actions on this issue under the new Global Framework on Chemicals.

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